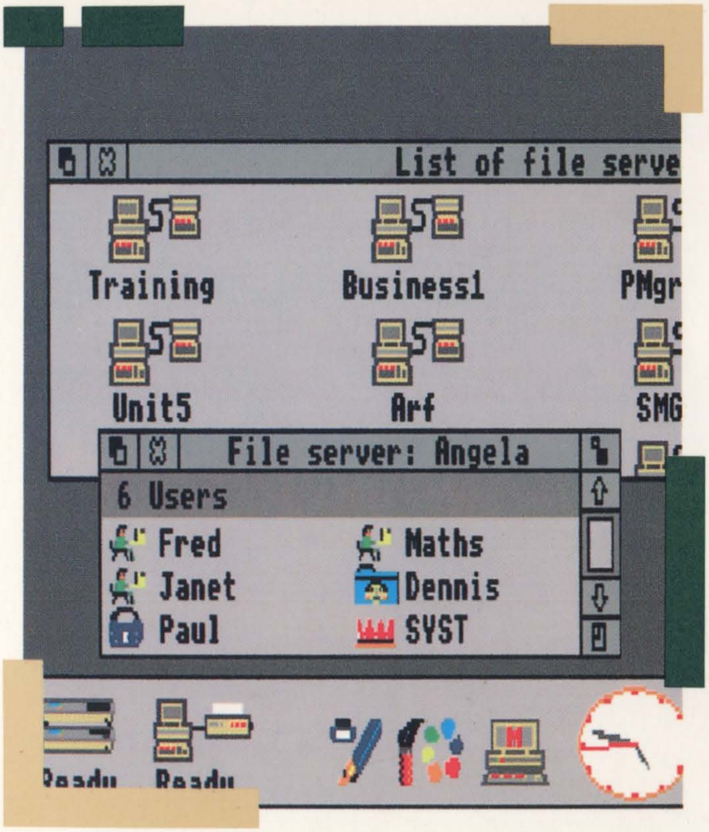
ACORN RISC OS
LEVEL 4 FILESERVER

NETWORK MANAGER'S GUIDE



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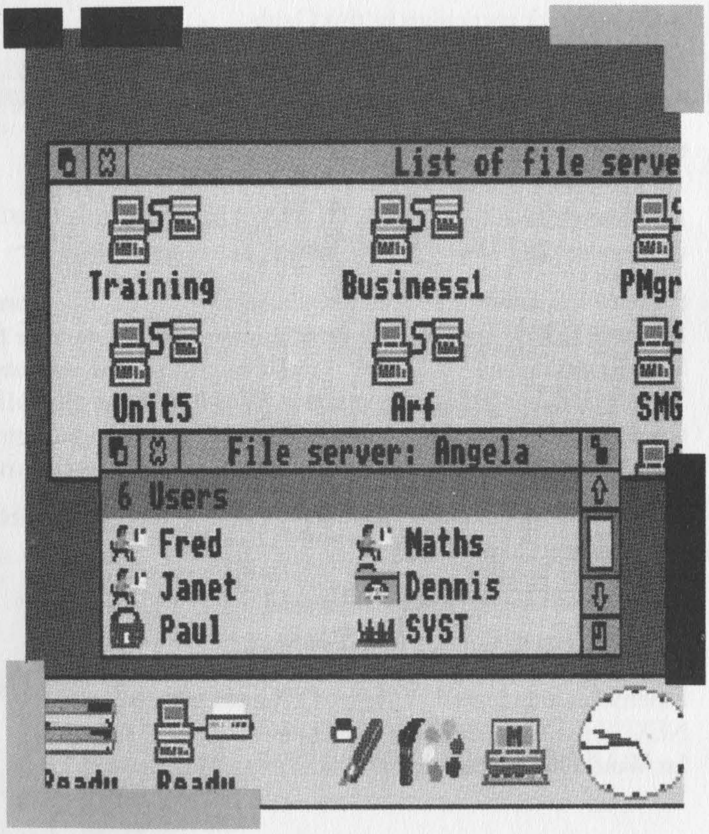

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About this Guide

Who should read this Guide?

You should read this Guide if you want to install and run the Acorn RISC OS Level 4 Fileserver and perform management tasks with it, such as adding and deleting users, controlling access to files, allocating space, and running a print spooler. You do not need to read all of this Guide if you only want to access and use the Fileserver as an ordinary user, but Part IV, *Users and the Fileserver*, gives some information that will help you.

This Guide assumes that you are already familiar with the RISC OS desktop and can use the desktop to perform routine tasks such as opening directory displays and menus, copying files, formatting floppy discs and loading applications. If you need advice on any aspects of normal RISC OS operation, consult the *User Guide* or *Welcome Guide* supplied with your RISC OS computer.

The Guide describes how to use the Level 4 Fileserver from the RISC OS desktop. It is also possible to control it from the command line. The *commands for running the Fileserver in this way are described briefly in Appendix A, but for a fuller description of the commands, see the *User Guide* supplied with your computer, the *FileStore Network Manager's Guide*, or the *Econet Level 2/3 File Server User Guide*.

You can only run the Fileserver on a computer connected to an Econet Local Area Network. This Guide does not give advice on setting up or running an Econet network; information on Econet can be found in the *Econet Installation Guide* and the *Econet Advanced User's Guide*.

Structure of the Guide

This guide is divided into an introduction and four Parts:

Part I: Getting started

Introduction to the Level 4 Fileserver – introduces the structure of the Fileserver and the role of the Network Manager.

Hardware to use with the Fileserver – describes the minimum hardware configuration needed to install and run the Fileserver.

Installing the Fileserver – describes how to install the Fileserver.

Storing information on the Fileserver – describes how information is stored by a Fileserver.

Part II: The Network Manager's role

The Fileserver Network Manager – introduces the Network Manager's job and describes the kind of tasks the Network Manager needs to perform.

Part III: Management tasks

These chapters tell you how to carry out the tasks outlined in Part II:

Setting up the Fileserver – tells you how to set up the Fileserver and how to get the best from it.

Managing the Fileserver: !Manager – explains how to use !Manager to perform management tasks such as adding and removing users, controlling the allocation of space and setting other features of user profiles.

Backing up the Fileserver – explains how to make back-up copies of the files stored on the Fileserver.

Other management tasks – explains how to perform some tasks you may need to perform only rarely, such as setting which filing systems will be exported by the Fileserver.

Monitoring use of the Fileserver: !Server – describes the use and control of the log file that records use of the Fileserver, and explains how to set various server configuration options.

Managing the print spooler: !Spooler – describes how to set up the print spooler and manage the print queue.

Part IV: Users and the Fileserver

Using the Fileserver from the desktop – explains how the Fileserver appears to users with a BBC A3000 or Archimedes RISC OS station.

You might like to photocopy this chapter and give a copy to each network user with a RISC OS station.

Using the Fileserver from the command line – directs users with other stations to information on using the Fileserver.

Appendices A-C

Appendix A: *Command summaries – gives a list of the *commands for operating the Fileserver from the command line.

Appendix B: Error messages – lists error messages you or other users might get while using the Fileserver.

Appendix C: The Broadcast Loader – explains how the Broadcast Loader can help you make the most of the Fileserver in the classroom.

Glossary

Explains the meanings of terms used to describe the Fileserver.

Conventions used in this Guide

This guide uses the following typographical conventions:

Menu commands are shown in bold type, eg:

Save Options

*Commands and anything else you have to type in as shown are printed in Courier typeface, such as:

`*CAT`

It doesn't matter whether you use upper or lower case for command names.

Arguments to commands are shown in italic Courier, like this:

`I AM` *`userid`*

Substitute an appropriate piece of text – a user name in this case. Decimal numbers are shown as *`nnn`* and hexadecimal numbers as *`hhhh`*.

Optional arguments are shown in square brackets. Alternative arguments are separated by a vertical bar, eg:

`endaddr|length`

shows that you need to give *either* an end address *or* a length.

Part I: Getting started

Introduction to the Level 4 Fileserver

The Level 4 Fileserver is a fileserver for computers connected together on an Econet Local Area Network. You can also use it in conjunction with an Ethernet network, using the TCP/IP product running NFS. It extends the facilities provided to users in four main ways:

- By providing space to store files.
- By allowing users to share network resources, such as printers.
- By making information available to all users on the network.
- By providing a print spooler so that users can add their files to a print queue to be printed when the printer is available.

The Level 4 Fileserver can be controlled from the RISC OS desktop, and is intended for use in this way. The desktop interface allows you to manage the server and print spooler easily, using the usual RISC OS procedures. You can, however, control it from the command line instead; the commands you need to use are listed in Appendix A.

Fileserver modules

The Fileserver has three modules:

- !Manager
- !Server
- !Spooler.

Each of these appears on the icon bar as an icon when you load it. You need to load !Server before anyone can use the Fileserver, and !Spooler before users can send files to the print spooler queue, but you will only need to load !Manager when you want to carry out management tasks.

An alternative version of !Server, called Level4, is supplied for non-desktop use. This does not operate from the desktop, but takes over the computer completely, replacing the desktop.

!Server

The !Server application is the module that performs fileserver functions. You can monitor use of the Fileserver by recording events in a special file, called the *logfile*, and displaying a window that shows how the server is being used. The logfile stores a record of what users do with the Fileserver. You can choose the events that are recorded in it so that you have, say, a record of every time someone logs onto the Fileserver, or saves a file.

!Manager

The !Manager application provides the routine management tasks you will need to perform to control use of the Fileserver. These include adding and removing users, allocating space, and setting user privileges and boot options. It also allows you to look at and control how users use the Fileserver.

!Spooler

The !Spooler application allows you to set up and run a print spooler. A print spooler makes the same printer available to many users. The spooler builds up a list of files that need to be printed, and the printer processes each in turn. The !Spooler application allows you to set up and manage the print queue. You can, for example, close down or suspend the queue or remove files from the queue so that they will not be printed.

Level4

It is possible to run the Fileserver without the desktop interface, using the standalone module, Level4. This replaces !Server; !Manager and !Spooler can still be used as normal from another station.

The Network Manager

The Fileserver needs a Network Manager who will set up the network, maintain security of information, add and delete users and allocate storage space to them, and carry out routine maintenance and fault-finding tasks.

Network Managers have special privileges over other users, which give them access to all information on the network, and the ability to carry out management tasks. This privilege level may be given to one or more user identities. The discs supplied with the Fileserver provide a user identity SYST which has this privilege. This identity has no password set up; you should set one as soon as you install !Server to prevent others using it. This is described in the section *Changing the SYST user identity* in the chapter *Managing the Fileserver: !Manager.*

The role of the Network Manager is described in Part II of this Guide; the tasks the manager needs to perform are described in detail in Part III.

Hardware to use with the Fileserver

The Level 4 Fileserver is a software product, but you will need a certain minimum hardware configuration in order to install and run it. This chapter explains what hardware you will need, and what you can use.

Minimum requirements

To make use of the Fileserver, you will need *at least* one RISC OS computer connected to an Econet local area network and *at least* one other RISC OS, BBC or Master Series computer attached to the network. The RISC OS computer will be used to run the Fileserver software and must have:

- a hard disc unit installed
- at least 1MB of memory, and
- run RISC OS version 2.00 or later.

The directory !System supplied on the disc with the Fileserver contains the modules you need to use to run the server. You must use these or later versions.

You can run the Fileserver on a station that does not have a monitor or keyboard attached. You will not be able to use !Manager and !Spooler from the same station in this case, unless you first connect a monitor and keyboard.

Supported hardware

Once you have met the minimum requirements, you can add up to 253 additional computers to the network segment, though only 128 users on a segment can log on to the Fileserver at once. If you have several Econet networks linked together with bridges, you can make the Fileserver available to users on any of the connected networks. You can also use any of the currently available storage media using these filing systems:

- ADFS
- SCSIFS
- NFS
- RAMFS

or any other file-core compatible system

- CDFS.

The Level 4 Fileserver does not support the Acorn Atom, or System 3, 4 or 5 client computers, or BBC computers using NFS versions lower than 3.6. You cannot use L-format floppy discs with the Fileserver.

Although a large number of users may be connected to a single Fileserver, there is a practical limit to the number that can effectively use the Fileserver at any one time. It is likely that if more than ten users with RISC OS stations, or more than about forty users with BBC or Master series stations, use the Fileserver at the same time for accessing, working on and saving files, the Fileserver performance will be significantly reduced. If the Fileserver is used mostly for electronic mail and other data exchange, many more users can be accommodated before performance is degraded.

You should make use of bridges to link small networks together rather than overload a single, large network.

Installing the Fileserver

The Fileserver disc

Two versions of the Fileserver are supplied on the discs, !Server and Level4. Both must be run on a RISC OS computer, but one can be started as a desktop application under RISC OS, and the other runs without using the desktop. Both versions can be used on a machine without a monitor or a keyboard

The Fileserver disc contains these files:

- !Server
- !Spooler
- !Manager
- Level4
- !System
- Readme.

There is also a Support Disc containing library directories to help you use BBC and Master series stations as well as RISC OS stations:

ArthurLib:	for use with RISC OS stations; containing SetFree, SetStation and Users.
Library:	for use with Model B stations; containing Close, Date, Discs, Flip, Free, FS, Netmon, Notify, Prot, PS, ReadFree, Remote, SetFree, Time, Unprot, and Users.
Library1:	for use with Master series stations; containing Date, Discs, Free, Netmon, Notify, Readfree, Remote, Set (version 1.06), SetFree, Users and View.
Comp_Welc	containing utilities and boot files to use with the Master Compact.
Master_Wel	containing utilities and boot files to use with the Master 128.

Which files you need to copy to install the Fileserver depends on whether you want to run it from the desktop or in non-desktop mode.

Installing the Fileserver for the desktop

If you want to run the Fileserver from the RISC OS desktop, follow these steps:

1 Set the copy options to overwrite earlier versions of files with the same name by typing:

```
*Set Copy$Options N R ~D
```

2 Copy the application directories !Server, !Manager and !Spooler into the root directory of the hard disc of the computer you want to use to run the server. You can copy !Manager and !Spooler onto different stations at this stage if you prefer, or you can copy them from the Fileserver into local disc space on another machine when you want to use them.

3 Find the directory !System on the Fileserver hard disc It may be in the root directory, or inside the directory Apps1. Copy !System from the Fileserver disc into the same directory. The contents of the directory Modules in !System will be added to any modules you already have in this directory on the hard disc. If you have copied !Manager onto a different station, copy !System onto this station, too.

4 Give the hard disc a suitable name. You can do this using Name disc from the hard disc drive icon bar menu, or `*NameDisc` from the command line or a command task window. For example:

```
*NameDisc 4 History
```

The name you give will be used to identify the Fileserver on the network.

5 To start !Server, double-click on its icon in the directory display.

Installing the Fileserver for non-desktop use

If you want the Fileserver to take over the machine altogether, so freeing the computer of the overhead of running the desktop and giving more memory to the Fileserver, you can use the non-desktop version, Level4, instead of !Server. You won't be able to run !Spooler and !Manager from the same station if you are using Level4. To install Level4, follow the steps listed above, but also copy Level4 into the root directory of the hard disc of the computer you want to use to run the server.

To start up Level4, double-click on its icon in the directory display or start it from the command line without running the desktop by typing:

```
*RUN pathname.Level4
```

If you start up Level4 from the command line, more memory will be available to it than if you first start up the desktop.

Installing !Manager

You can run !Manager from the same station as the Fileserver, or from a different station. It is best to run it from a different station to give the best performance on the Fileserver. If you like, you can store !Manager on the Fileserver and run it from another station.

!Manager needs four modules:

- NetFS 5.53 (or later)
- ABCLib
- FPEmulator, and
- WimpMan.

These are supplied in the Modules directory inside !System on the Level 4 Fileserver disc. If you want to run !Manager from the same station as !Server, these modules will already be present, because you will have copied them to run !Server. If you want to run !Manager from a different station, you can either store the modules on that station too, or store them on the Fileserver station and copy them into local disc space when you want to start using !Manager.

If you store !Manager and the modules on the network, it is best to copy them into local disc space on your station when you want to use !Manager. You can copy them onto your hard disc, or create a RAM disc to store them while you are using !Manager. If you load NetFS from the network, rather than from local disc space, you will lose your network connection and will need to log onto the Fileserver again after loading NetFS. If you copy NetFS to local work space and then load the copy before logging on, this will not happen.

To run !Manager, click on its icon in the directory display of the disc you have stored it on. The !Manager icon appears on the icon bar. The chapter *Managing the Fileserver: !Manager* explains how to use !Manager to perform management tasks.

Installing the print spooler

To run the print spooler you need a RISC OS machine connected to a printer. It is possible to use the same station to run both the Fileserver and the print spooler, but for the best performance, you should run the printer spooler from a station dedicated to that task. The spooler station will need a hard disc with sufficient space to store spooled files. The station running the spooler must be on the same network as the Fileserver.

You should load !Spooler from the station on which you wish to use it; don't load it over the network. If you want to store !Spooler elsewhere on the network (perhaps on the Fileserver station), copy it into local disc space on the spooler station before loading it. You can copy it onto the hard disc, or create a RAM disc to hold it.

To load the print spooler, double-click on its icon in the display for the directory it is stored in. The !Spooler icon appears on the icon bar. The spooler is then available to users on the network. The chapter *Managing the print spooler: !Spooler* explains how to set up and monitor the print spooler.

Copying Utils and library directories

You will also need to copy the library directories onto the Fileserver station. These are on the Support disc supplied with the Fileserver.

If you are using both RISC OS and non-RISC OS stations on the network, you will need to load different libraries for the different types of machine. You will need to include ArthurLib for RISC OS stations, Library if you have any Model B stations and Library1 if you have any Master series stations using the Fileserver. When you set up a new station, you can configure it to select the appropriate library automatically. To configure a Master series computer, type:

```
*Opt 5,1
```

and for a RISC OS station, type:

```
*Configure Lib 1
```

A BBC station does not need any special configuration.

Using a boot file

Once you have loaded !Server onto the hard disc unit and have correctly installed the modules, you will be able to run it by double-clicking on its icon in the directory display, and run !Spooler and the !Manager application by double-clicking on their icons. To run Level4, you can double-click on its icon in the directory display or run it from the command line. However, if you want to load one or more of these automatically each time you turn on the Fileserver station, you can create or edit a boot file to do this for you. A boot file will be executed each time you turn on or reset the machine, as long as you set the autoboot option. The section *Setting the Fileserver to start automatically* in the chapter *Setting up the Fileserver* explains how to write a suitable boot file and set it to run whenever the computer is turned on. The file SystemBoot on the Fileserver support disc is an example of a suitable boot file.

Getting the best from the Fileserver

You will get the best possible performance from the Fileserver if you don't use the station running it for anything else. This means that you should use a different station to run the print spooler, and when you want to use !Manager.

Running the Fileserver in mode 0 will also improve its performance. To set mode 0 as the default desktop mode, either use the !Configure application or type:

```
*Co. WimpMode 0
```

at the command line or in a Task window.

Security

To prevent unauthorised people tampering with information stored on the Fileserver, keep the Fileserver station in a locked room. Even if you run the Fileserver on a station without a keyboard and monitor, it is sensible to take this precaution to prevent anyone attaching a keyboard and monitor and so gaining access to files.

Although you should keep the Fileserver locked away, do not keep it in a cupboard or unventilated room. If you keep a computer in such an environment, it may overheat and stop working.

Remember that the Fileserver station could be turned off accidentally or deliberately; plug it into a mains socket that is not readily accessible, and cannot be confused with the sockets for other devices.

There is more about security in the section *Security of information* in the chapter *The Fileserver Network Manager*.

Storing information on the Fileserver

Discs and filing stystems

One of the most important tasks performed by the Fileserver is to store information for people using computers connected via an Econet Local Area Network. A Fileserver can give users access to its own hard disc, an area set aside as a RAM disc on the Fileserver station, another hard disc unit (or floppy disc) on the same station, a CDROM unit, a SCSI hard disc, or to another device over a network using the TCP/IP product and NFS.

If the Fileserver has more than one disc or filing system available, each that you choose to export is represented by its own icon in directory displays. Information on making different devices and filing systems available to Fileserver users is given in the section *Controlling the filing systems exported* in the chapter *Other management tasks*.

How information is organised

Information is organised into a hierarchical structure of directories and files on a disc. This system is described in the *User Guide* supplied with your RISC OS computer. The Fileserver allows you to allocate users or groups of users their own directories, control their access to other files and directories, and provide frequently-used material in directories available to all users.

A directory on the Fileserver may contain up to 255 files.

The 'root' directory

The top level directory of the Fileserver is its root directory. This will probably be the root directory of the hard disc it is loaded on. Users do not generally use the root directory directly, but work within their own directory. However, they will need to display a directory display for the root if they want to gain access to application directories and other users' directories.

User directories

Generally, each Fileserver user has a user directory, to hold files and sub-directories. Within each user directory, a user may build up a structure of files and directories. Users can create, alter and delete their own files and directories, but do not usually have such privileges over files and directories in other users' directories. The user directories are stored in the Fileserver root directory.

Group directories

You may also set up group user directories. In this case, one user may own the directories of other users within the group. All users in the group have the usual access to read, write, create and delete their own files, and the group owner also has these rights over all files and directories in the group. The group root directory is effectively the group owner's user root directory. A group directory appears in the Fileserver root directory alongside the user directories.

Library directories

The root directory also contains at least one library directory which holds transient commands. There are three library files on the Support disc. These are:

- ArthurLib: suitable for RISC OS machines on the network
- Library: suitable for BBC machines on the network
- Library1: suitable for Master 128 and Master Compact computers on the network.

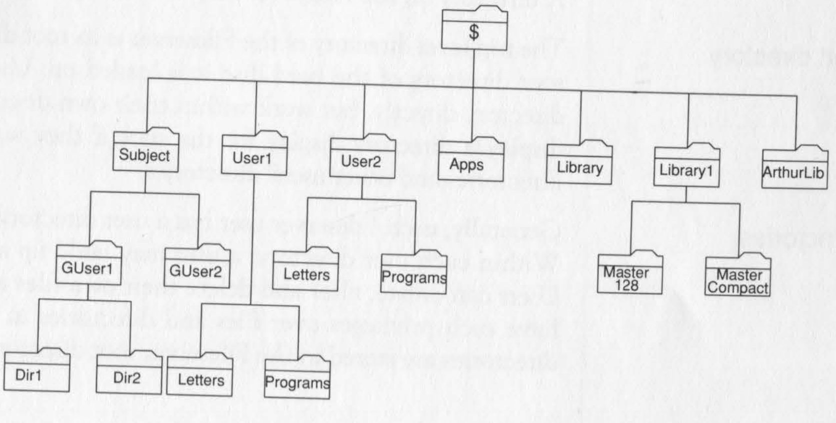
You will need to copy one, two or all three of these onto the Fileserver hard disc depending on which types of machines you have on the network. The appropriate library will be accessed by the Fileserver whenever necessary.

Application directories

You may want to keep copies of frequently-used files, programs and applications in a directory to which all users have access. If you copy applications into this directory, you will need to set all files in the application directory to have public read access. If you want users to load applications directly from this directory on the network, you will also need to redirect the scrap files created by applications. There is more information on this in the section *Making applications available to users* in the chapter *Other Management Tasks*.

Directory structure

The structure of the Fileserver root directory will look something like this when you have added user directories and libraries:



The directory Subject is a group directory containing one user with a user directory and one without. Subject would own the directories and files of both GUser1 and GUser2.

The Fileserver root directory is identified by the character `$`. A user's own root directory is identified by the character `&`.

When users log on to the Fileserver, they enter their own user directory, so if User1 logged on, a directory display for the directory User1 would appear showing the directories Letters and Programs. If the user directory was on a hard disc drive 4 called Economics, the directory display would have the title `net#Economics:&`. When a system user or a user without a directory logs on, the root directory is shown, with the name `net#Economics:$`.

Part II: The Network Manager's role

The Fileserver Network Manager

The Network Manager is responsible for regular tasks that govern the running and day-to-day use of the Fileserver. This chapter tells you what tasks you will need to carry out regularly, and suggests some security measures to help you protect information stored on the Fileserver. Part III of this Guide explains how to carry out the tasks described here.

The Network Manager's responsibilities fall into these areas:

- Installing and setting up the Fileserver
- Security of information
- Adding and removing users and group users from the system
- Allocating space to users and setting up user profiles
- Managing facilities, such as programs, file storage space and printers
- Controlling the print spooler.

Installing and setting up the Fileserver

Installing the Fileserver involves copying the necessary files and directories from the Fileserver disc on to the hard discs of the stations you intend to use to run the Fileserver, !Manager and the print spooler. Setting up the Fileserver involves creating user identities and perhaps group users, and creating a password for the privileged identity SYST. The procedure for creating users when you first begin to use the Fileserver is the same as the procedure for adding extra users when the Fileserver is established. It is very important that you create a password for the user identity SYST to prevent other people using this powerful identity.

The description in this Guide assumes that you have already set up an Econet network and have connected the stations you want to use to the network. If you have not done this, or need information on connecting additional stations, consult the *Econet Advanced User's Guide* or the *Econet Installation Guide*.

Security of information

Once users start to put their work on the Fileserver, security of information is likely to become an important issue. You will need to protect users' files against accidental loss and against abuse by unauthorised people.

There are five main ways that you can maximise security:

- Use passwords to validate users' log on
- Restrict access to files
- Keep the Fileserver in a locked room
- Restrict users' privileges
- Take regular back-up copies of the Fileserver disc(s).

You can also use the Fileserver in non-desktop mode (not running from the desktop) and without a monitor or keyboard. Remember that someone could attach a monitor and keyboard, though.

Passwords and software access

Generally, if a user creates a file and saves it in his or her own directory on the Fileserver, he or she has the right to open, read, alter or delete the file. Other users logging on with different identities may be able to look at and read the file, but cannot usually alter or delete it. However, for this security system to work, each user must log on using his or her own user identity. A user who successfully logs on as someone else will have access to exactly the same facilities as the genuine user and so can alter and delete files in the other user's directory. To protect people's files from unwanted interference, it is essential that you make sure that users:

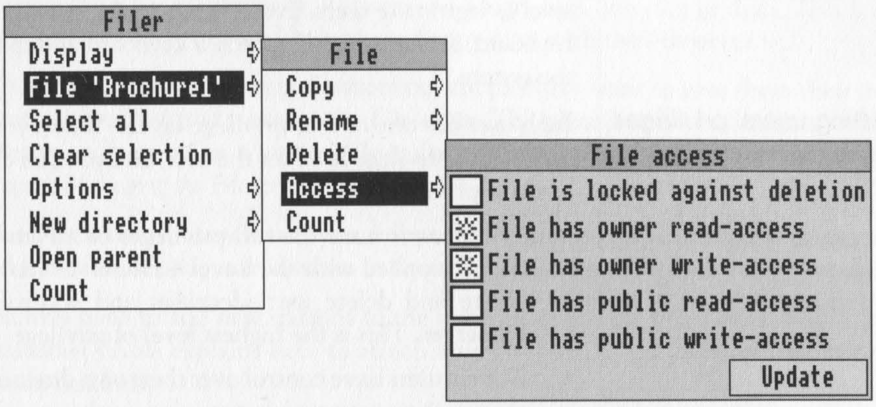
- Use passwords
- Change their passwords frequently
- Use non-obvious passwords
- Don't tell others their passwords
- Don't leave a written record of their password lying about.

Generally, users set their own passwords; make sure they do not choose very obvious passwords, such as the name of a member of their family, the date of their birthday, or their telephone number.

Restricting access to files

You or a user can specify the rights of access you want other users to have to a file, and protect it from deletion. Access to a file is divided into two areas: owner access and public access. By default, the person who creates a file (the owner) is able to read, alter or delete a file. Public access is usually restricted and other users may not even be able to read the file.

To set the access restrictions on a file, select its icon in the directory display and use **Access** in the menu. This displays a dialogue box like this:



File access

- ☐ File is locked against deletion
- ☒ File has owner read-access
- ☒ File has owner write-access
- ☐ File has public read-access
- ☐ File has public write-access

Where there is a star beside an access setting, that option is activated. Click on an option icon to turn a setting on or off. Use the first four icons to set the owner and public access to the file, and the final icon to lock the file against deletion. (Versions of RISC OS later than 2.00 may operate differently; refer to the *User Guide* supplied with your RISC OS computer for details.)

If you use **Access** for a directory icon, only the `Lock against deletion` option is available: you can only set read and write access for files, not directories. Files are automatically locked to other users so that they cannot be deleted.

If you select several files or directories at once, the Access dialogue box will show the access rights for only the first item in the selection, but set access rights for all selected items of the same type (file or directory). For example, if you select a mixture of files and directories, with a directory as the first item, the Access dialogue box will show the access rights for the first directory and will set access rights for all directories. The access rights for files will not be altered.

It is also possible to 'hide' files and directories from other users completely. A hidden file does not appear in the directory display, so users are not even aware of its existence. If you don't want users to be able to see a file at all, set it to have no public access and use the 'hidden objects' option from !Server (see *Hidden objects*, in the chapter *Monitoring use of the Fileserver: !Server*). A file without even public read access will then be omitted from directory displays opened by users other than the file's owner. Similarly, a locked directory will not appear in directory displays if you have set 'hidden objects' on.

Restricting access to the Fileserver

Another important security measure is to keep the Fileserver in a locked room. If anyone has access to the machine on which the Fileserver software is loaded, they will be able to look at, use and alter files and directories, regardless of their own privilege level as legitimate users. Even if you run the Fileserver station without a monitor and keyboard, someone could attach a keyboard and monitor and violate the security of the system.

Restricting users' privileges

Each user has one of four privilege levels. When you create a new user identity, you can set the privilege level for the user, and you can change it later if you want to. The levels of privilege are:

- *System* users have the full privileges of a Network Manager. The user identity SYST supplied with the Level 4 Fileserver has this privilege. A system user can create and delete user identities and control the use and operation of the Fileserver. This is the highest level of privilege.
- *Normal* users have control over their own directory, can set their boot options and change their password, but cannot use the special network management facilities (such as creating users). When you create a new user identity, it will be given this privilege level by default. The users BOOT and GUEST supplied on the Fileserver disc are both normal users.
- *Locked* users have much the same privilege as normal users, except that they can't change their boot options or password.
- *Fixed* users cannot change their boot options or password, and cannot look at any directories other than their own root directory.

Many of the tasks which the Network Manager has to perform can *only* be carried out by the Network Manager, using the privileged user identity SYST. **This identity is very powerful; other users should not be allowed to use it, as it will allow them to perform all sorts of potentially dangerous tasks, such as altering the set-up of the Fileserver and deleting other users' files.** To ensure that unauthorised users don't use this identity, remember to log off whenever you are leaving your station unattended, don't tell others your password, and change your password frequently. You should change the Network Manager's user name from SYST to something less obvious; it is a good idea to change the user name as well as the password sometimes.

Making back-up copies

The best insurance against losing data, whether due to users' mistakes, power cuts or unwanted interference, is to take daily back-up copies of the files stored on the Fileserver. If you do lose data, you can then restore (copy back) the last version of the files, which will be no more than a day old.

It is good practice to make back-up copies at the same time each day, ideally before shutting down the Fileserver, and keep them stored in a safe place. (See the chapter *Backing up the Fileserver.*) You can back up onto another hard disc, a SCSI unit, a tape streamer, another Fileserver or, if there is no alternative, onto floppy discs. This is the only time at which you are likely to use floppy discs with the Fileserver.

Adding and removing users

When a new user comes onto Econet you will probably want to give them their own identity, directory and space on the Fileserver. The procedure for creating a new user identity and setting up a user profile is described in *Adding new user identities* in the chapter *Managing the Fileserver: !Manager.*

When established users leave, you will probably want to remove their user identity and files. See *Deleting user identities* in the chapter *Managing the Fileserver: !Manager.*

You may need to add new stations to the network as you get more users. The *Econet Installation Guide* explains how to attach a new station to the network, and set the station number.

Managing space

There are two aspects to managing space on the Fileserver:

- Allocating space to users, and
- Using Fileserver space effectively.

Allocating space

Generally, you will want to allocate a user space to store files and directories (though it is possible to have users with no space of their own). You can allocate space to new user identities as you create them, and you can alter space allocations at any time. The space allocations you make will be used to limit users' use of the Fileserver for storing files as long as you enable the space accounting option in !Server (see *Setting !Server options* in the chapter *Monitoring use of the Fileserver: !Server*). When space accounting is turned off, users will be able to save as many files as they like, using space on the Fileserver without restriction.

Using space efficiently

The second consideration is using space on the Fileserver efficiently. This involves avoiding duplication of files on the Fileserver (or available elsewhere on the network) and removing unwanted files. You can check the space left on the Fileserver disc using the **Free** command in the disc drive menu from the Fileserver station. When the 'Bytes free' figure for the hard disc falls below about 1MB, or 10% of the total disc size, it is time to clear out unwanted files and archive files that are not being used regularly. (If you are running the spooler from the same station as the Fileserver, you will also need extra empty space on the hard disc to store spooled files before they are printed.) It is better to manage space thoroughly all the time, though, than to wait until it is running low. To help keep the Fileserver free from outdated files you can:

- Encourage users to delete files as soon as they have finished with them.
- Discourage users from having duplicate copies of commonly used files (eg form letters) or of files and applications already stored in generally accessible directories. Commonly used files and programs can be kept in a directory available to all users in the Fileserver root directory.
- Avoid keeping extra backup copies and unwanted files on the Fileserver.

You can delete or move files from the Fileserver hard disc using the normal RISC OS procedures.

Managing facilities

One of the tasks of the Network Manager is to make sure that users have access to the files, programs, printers and space on the Fileserver that they need.

Adding new program files

There will be times when you want to add more program or data files to those stored on the Fileserver. These may be programs you have bought for network use, or new data files to be used with existing programs. The way in which you add these files will depend on how the programs are supplied to you, and also on the way you want users to use them. Add new programs and data files to the Fileserver disc in exactly the same way as you would add them to any other hard disc, following the installation instructions supplied with the program, or copying data files using the usual desktop procedures. You will probably want to copy the files into a directory to which all users have access.

When you have copied applications, you will have to change the access of the files inside the application directories to public read. If you don't do this, the application won't be able to find its !run file because it will be inaccessible, and the application won't load. Some applications also need write access to store settings and keep macros. In these case, problems can develop if many readers have write access to an application as one user may overwrite settings made by another, or several users may be using scrap files at the same time. The section *Making applications available to users* in the chapter *Other management tasks* explains how to avoid difficulties.

File availability

When you become aware of files that users are finding helpful, such as form letters in 1st Word Plus, or a BASIC program, you can make them widely available by storing them in a directory to which everyone has access.

In this way you can set common standards for your organisation while reducing the number of space-wasting duplicate files on the Fileserver disc. Move and copy files and directories using the usual desktop procedures, and make sure they have public read access. Remember that if you have any users with the privilege Fixed they won't be able to access files outside their own directory.

Keeping records

To simplify extending your Econet system and dealing with problems, you should keep a written record of the station numbers of computers, Fileserver units, print spooler names and user identities.

Maintenance tasks

While you can carry out most of your responsibilities with the Fileserver running, there are a small number of tasks that you may occasionally need to perform that must be done while the Fileserver is not running. These tasks are:

- Formatting discs (see *The Advanced Disc Filing System (ADFS)* in the *User Guide* supplied with your RISC OS computer).
- Changing the Fileserver's station number (using *SetStation, see page 49).
- Changing a disc's title (using *NameDisc, see page 49).

Unless you use floppy discs for storing back-up data, you are unlikely to do any of these regularly.

Because the Fileserver will be out of operation while you perform these tasks, you should do so only when it is convenient to other users for you to close the Fileserver down.

Controlling the print spooler

The print spooler allows several users to use the same printer, without having to wait until the printer is ready before sending their data files. The print spooler manages a 'queue' of files waiting to be printed. As Network Manager, you will have to set up the print spooler and a suitable printer, and oversee the print queue. These tasks are described in the chapter *Managing the print spooler: !Spooler.*

Part III : Management tasks

Setting up the Fileserver

This chapter explains how to start up and log on to the Fileserver and how to create a boot file to start up the Fileserver automatically whenever the station is turned on.

Starting up the Fileserver using !Server

At the start of the day, the Fileserver will usually be turned off. To get it ready for users, all you need to do is to turn on the computer you are using to run the Fileserver and start it up:

1 On the RISC OS desktop, open a directory display for the directory containing !Server.

2 Double-click on the !Server icon. The icon appears on the icon bar with the caption `Ready` beneath it.

You can write a boot file to load the server at start-up, and then you will not need to do this each day. This is explained below in the section *Setting the Fileserver to start up at power on.*

Starting up the Fileserver using Level4

If you are using Level4, you need to do the following to start up the Fileserver:

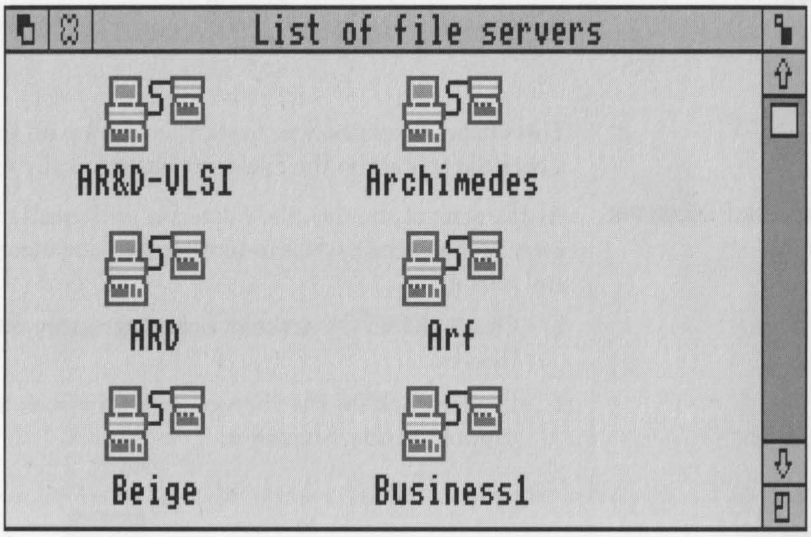
1 On the RISC OS desktop, open a directory display for the directory containing Level4.

2 Double-click on the Level4 icon.

Alternatively, you can write a boot file to load Level4, and then you will be able to run it on a station without a monitor or keyboard. You will need to attach a monitor and keyboard to run !Server when you want to alter Fileserver options, though.

Logging on to the Fileserver

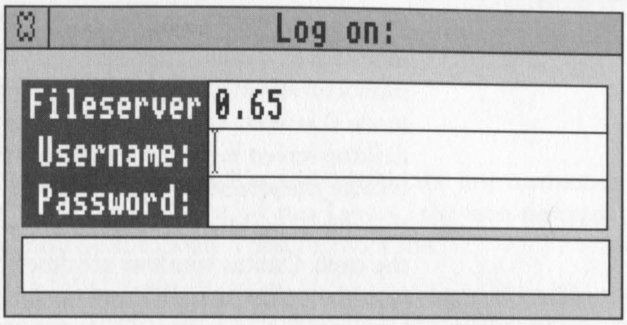
To check that the Server is loaded, you will need to use another computer on the network; you can't log on to the Fileserver from the station running it. Use **FS List** in the Econet icon menu to display a list of Fileservers available. The Fileserver you have just loaded should appear in the directory display, for example::



The name of each Fileserver is shown beneath or alongside its icon. There is an icon for each exported disc drive of each Fileserver; this usually includes the name of the hard disc the Fileserver is loaded on. There is more on exported disc drives in the section *Controlling the filing systems exported* in the chapter *Other management tasks.*

You can log on to the Fileserver to check that it is working. Display the logon window in one of these ways:

- Click on the Econet icon on the icon bar.
- Click on the Fileserver icon in the FS List display.
- Menu on the Econet icon on the icon bar and choose **Logon**



Fileserver 0.65

Username:

Password:

The name or station number of the Fileserver may already be shown in the first writable icon; if it is not, type its name or number and press Return. Log on as GUEST by typing:

```
GUEST
```

in the Username writable icon. As the Fileserver is supplied, there is no password for the GUEST user identity, so just press Return here. A directory display should appear showing the files available in the root directory of the Fileserver disc. After you have created a password for this user identity, you will need to give it in the appropriate writable icon at log on.

When you have logged on to a Fileserver, the Econet icon on the icon bar changes its name from Econet to the name of the Fileserver, for example:

Log off again (unless you want to continue using the Fileserver from that computer) by choosing **Bye** from the Econet/Fileserver icon menu.

Once you have loaded !Server, the server will be available to users on the network and will show in the display of Fileservers available.

Optimising performance of the Fileserver

The Fileserver will run best if you are not using the station running it for other work. You can also optimise performance by following these simple guidelines:

- Choose a simple screen mode for the Fileserver station. Sophisticated screen modes like 27 and 15 use more processing power than lower resolution modes. A monochrome mode generally uses less processing power than a colour mode, and mode 0 is best. Use `*Co. WimpMode 0` or !Configure to re-set the default desktop screen mode, or use the **Mode** command in the palette icon bar menu to change the screen mode temporarily.
- Avoid leaving the status window for the server or spooler displayed on screen all the time. (Status windows are described later.)
- Avoid logging a large number of events in the logfile; the less you use the logfile, the faster the Fileserver will run for users. (The logfile is described later.)

Setting the Fileserver to start up at power on

You can write a boot file and desktop boot file to start up the Fileserver each time the station is turned on or reset. This is especially useful if you are running the Fileserver on a station without a monitor and keyboard as it means that you don't need to attach these to start up the Fileserver each time. To set the Fileserver to start up automatically you need to:

1. Write a desktop boot file
2. Write a boot file
3. Configure the station to run the boot file each time it is reset or turned on.

The !Boot file must be a command file; !Deskboot should be an ordinary text file.

The desktop boot file

To create a desktop boot file to load !Server, follow these steps:

1. Open a new Edit file.
2. Assuming !Server is on hard disc drive 4, type this text, pressing Return at the end of each line:

   ```
   |Desktop boot file to load !Server
   *Run adfs::4:$.!Server
   ```

   The first line is a comment line; you can miss it out if you like. If !Server is not on drive 4, substitute its location in the second line. For example, if it was in a directory called FServer on a SCSI disc called Sales, you would need to type:

   ```
   scsifs::sales:$.FServer.!Server
   ```
3. Save the file in the root directory of the Fileserver's hard disc, giving it the name !DeskBoot.

The server loaded by this boot file is in the root directory of the hard disc drive 4. If !Server was stored anywhere else, you would need to give its full pathname. You could also include lines to run !Manager and !Spooler as well, either in this boot file or in boot files for use on other stations:

```
*Run adfs::4:$.!Manager
*Run adfs::4:$.!Spooler
```

If you already have a desktop boot file, you can add the line instructing the computer to run !Server to it. If you want to run Level4, the non-desktop version of the Fileserver, you don't need to write a desktop boot file.

!Boot

If you have a desktop boot file, you will need to create or edit a !Boot file to instruct the computer to run it. This must be a command file. Follow these steps to create a suitable boot file.

1. Use the option **New command file** from the Edit icon bar menu to open a new file.
2. Assuming the DeskBoot file is on drive 4 of the Fileserver station, type this text, pressing Return at the end of each line:

   ```
   |Boot file to run DeskBoot
   *Desktop -file adfs::4.$.!DeskBoot
   ```

   The first line is a comment line; you can miss it out if you like.
3. Save the file in the root directory of the Fileserver's hard disc, giving it the name !Boot.

If you want to include any other commands in the boot file, or if you are adding this line to a boot file you already have, you must put the line at the end of the !Boot file, as any *commands following it will not be executed.

A boot file to run Level4

If you want to load the non-desktop version, Level4, automatically at start-up, follow these steps:

1. Use the option **New command file** from the Edit icon bar menu to open a new file.
2. Type this text:

   ```
   |Boot file to load Level4
   *Level4
   ```

The first line is a comment line; you can miss it out if you like. The second line executes the file Level4. If this file is not in the root directory of the Fileserver's hard disc, give its full directory pathname. (For example,

```
*SCSIFS::Sales.$.FServer.Level4
```

would run Level4 stored in a directory called FServer on the SCSI disc Sales.)

3 Save the file in the root directory of the Fileserver's hard disc, giving it the name !Boot.

When the boot file is run, Level4 will start up, taking over the computer completely. The desktop will not appear, so if you want to set Fileserver options using !Server, you will need to re-set the computer without running the boot file. To do this, hold down the Shift key while pressing Break or the Reset button; the boot file will not run and the desktop will appear. Do not re-set the Fileserver station while users are logged on to the Fileserver.

Configuring the computer to run the boot file

To run the boot files automatically at start up, you need to configure the Fileserver station as follows:

1. Use the !Configure window to set Auto boot on, or type `*Co. Boot` at the command line
2. Type `*Opt 4,2` at the command line to instruct the computer to execute the boot file.
3. Set the Fileserver drive as the current disc drive, if it is not already, using the command `*Co. Drive 4` (if the Fileserver is on drive 4).

Each time you reset or start up the computer, the modules you have included in the deskboot file will be started up automatically. This means that you can remove the monitor and keyboard, and the Fileserver will start up whenever you turn the computer on.

Closing down the Fileserver

If you are going to shut the Fileserver down, it is a good idea to warn all users who are logged on, to give them time to tidy up their work on the Fileserver. However, if you have a large number of users this may be too time-consuming; the Fileserver will close all files. Use **Quit** from the !Server menu or **Shutdown** from the !Manager menu to close down the Fileserver. If you are running the Fileserver in non-desktop mode, or on a station without a keyboard and monitor, you will need to use **Shutdown** or `*FSShutdown` from a different station. This is described in the chapter *Managing the Fileserver: !Manager.*

Managing the Fileserver: !Manager

You will need to use the !Manager application whenever you want to carry out any of the following management tasks with the Fileserver:

- Changing the name and password of the privileged user SYST
- Creating new users and groups users
- Altering user profiles (including allocating space to users)
- Removing users
- Closing down the Fileserver.

When you first install the Fileserver, use !Manager to change the system user identity immediately.

Using !Manager

To use !Manager, log on to the Fileserver using a system privileged identity such as SYST. It is best not to use !Manager from the Fileserver station itself, as this will slow down the Fileserver for other users. You can't use !Manager from the same station as the Fileserver if you are using the non-desktop version, Level4.

You can load !Manager from the hard disc of the station you are using, or from the Fileserver into a RAM disc, or from a floppy disc on your station. If you copy !Manager onto a floppy or RAM disc, make sure you also copy the !System directory, as !Manager needs the versions of the modules that are supplied with it (or later versions). To load !Manager, double-click on its icon in the directory display. The !Manager icon appears on the icon bar:

The icon bar menu gives access to two commands.

Info

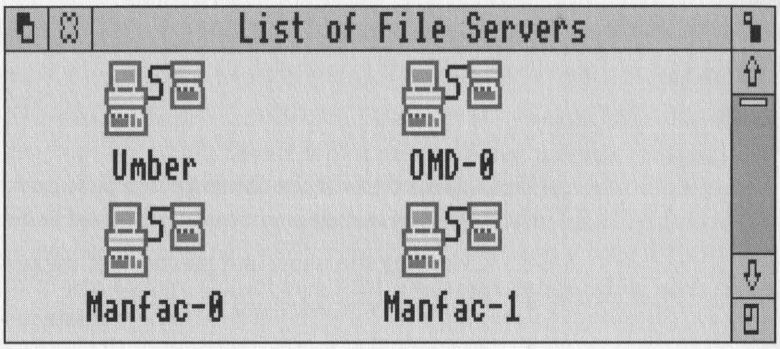
Displays details about the version of !Manager you are using.

Quit

Closes !Manager and removes its icon from the icon bar.

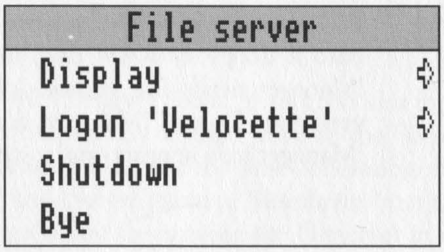
Starting !Manager

To use !Manager, click on its icon on the icon bar to display a window showing the Fileservers available, for example:



One of the Fileservers may be named Local server. This is the Fileserver on the station you are using to run !Manager.

You can perform management tasks for any of the Level 4 Fileservers. (You can see which Fileservers are Level 4 by using the **Full info** display option from the menu, described below.) You can also log on to a Fileserver from this window, log off the Fileserver you are using, and control the display of the icons in the window. If you press the menu button while the pointer is over a Fileserver icon or a Fileserver is selected, this menu is displayed:



Display

Allows you to choose how the icons are displayed. You can choose Large icons, Small icons or Full info, as in other RISC OS windows. You can also sort the icons by name, number or type.

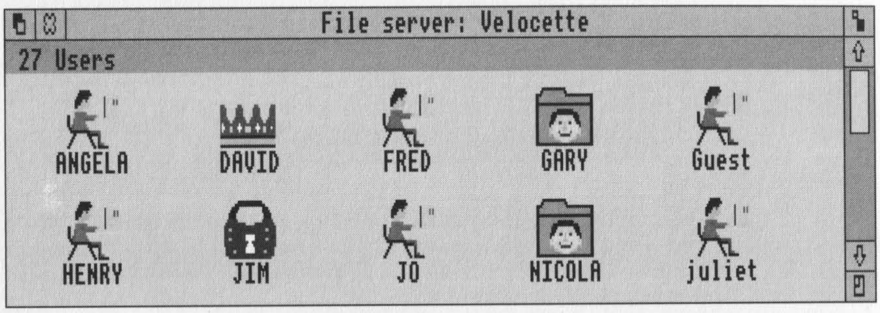
Logon 'FSname' Lets you log on to the Fileserver the pointer is over. This displays the normal logon window.

Bye Logs you off the Fileserver. It is only available if you have already logged on to that Fileserver.

If you don't first select a Fileserver icon, or if you press the menu button when the pointer is not over an icon, the option **Logon 'FSname'** is replaced by the name of the default Fileserver.

The Fileserver users directory display

When you want to perform management tasks on a Fileserver, log on to that Fileserver as a system privileged user and then click on its icon in the Fileserver display. A window showing an icon for each of the users created for that Fileserver will appear:



When you first use the Fileserver, there will be only three users, GUEST, BOOT and SYST.

The user icons show each user's level of privilege:

SYSTEM Users with system privilege have a crown icon

NORMAL Users with normal privilege have a seated user icon

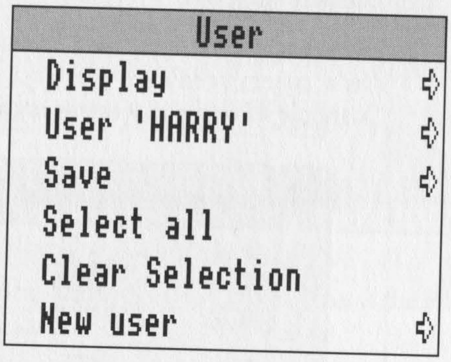
FIXED Users with fixed privilege have an icon of a face inside a directory

LOCKED Users with locked privilege have a padlock icon.

From the window of user icons you can create a new user identity, copy, rename or delete an existing user identity, send a message to or log off a user, and display a dialogue box to define or modify a user profile. These tasks are described in the rest of this chapter.

The Fileserver users menu

Press the menu button with the pointer inside the Fileserver window to display this menu:



The options are:

Display	Lets you select how the icons are displayed. You can choose **Large** or **Small icons**, or **Full info**, and can sort the users by name, station number or privilege level.
User 'name'	Leads to a sub-menu allowing you to Copy, Rename, Delete, Notify or Log off the user. These options are explained fully later on in this chapter.
Select all	Selects all user icons in the window. If you select all the users, you can perform some of the tasks from the **User 'name'** command on all users at once.
Clear selection	Cancels a selection of one or more users.
New user	Leads to a writable icon for you to give a name for a new user identity. This is described further in the section *Adding new user identities* below.

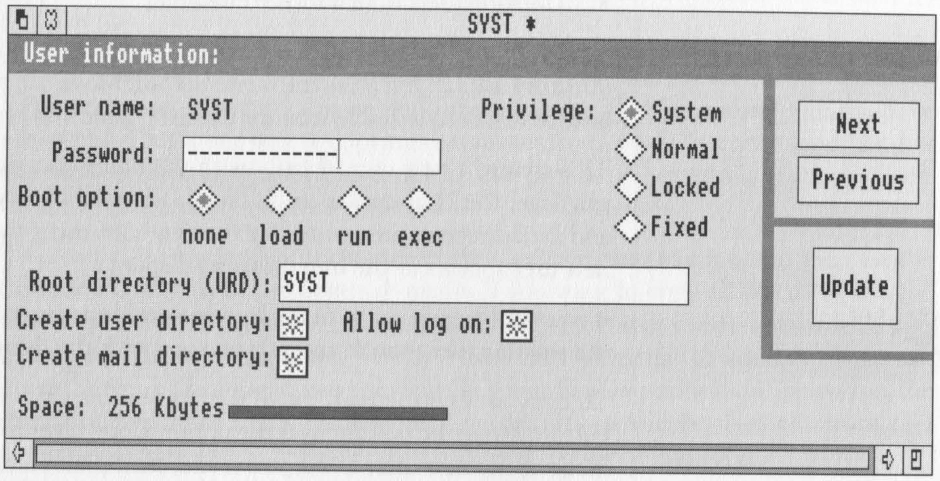
Changing the SYST user identity

Before you do anything else with the Fileserver, create a password for the privileged identity SYST to prevent other users from using it.

Log on to the Fileserver as SYST. Press Return in the password writable icon, as there is no password for this identity initially. Open a directory display for the !Manager application, and double-click on its icon to load it. The icon appears on the icon bar.

Click on the !Manager icon on the icon bar to open a window showing the available Fileservers. Then click on the icon for the Fileserver you want to use. The Fileserver window appears, showing an icon for each user identity created for that fileserver. If you have not yet created any users, the window will show just the users supplied on the Fileserver disc. The icon representing the SYST user identity is a crown. SYST is the only system privileged user supplied with the Fileserver.

To change the password for the SYST identity, you need to use the user profile window. Double-click on the user icon in the display; the user profile window appears:



User name: SYST

Password: -------------

Boot option: ◈ none ◇ load ◇ run ◇ exec

Privilege: ◈ System ◇ Normal ◇ Locked ◇ Fixed

Root directory (URD): SYST

Create user directory: ☒ Allow log on: ☒

Create mail directory: ☒

Space: 256 Kbytes

This window allows you to set various parameters to control how a user uses the Fileserver. It is described fully in the section *Setting user profiles*. To set a password for the identity SYST, click on the Password writable icon. Type the password you want to set. It must be at least six and up to 22 alphanumeric characters. Do not choose a password that other users might be able to guess, such as the name of a member of your family, your car registration number, telephone number or birth date.

When you have finished, click on the options icon marked Update, and then on the close icon of the window. In future, you will need to type the new name and password in the appropriate writable icons of the logon dialogue box each time you log on to the Fileserver using the system privileged identity.

As an added security measure, you should also change the name you use to log on as a system-privileged user. You can do this using the **Rename** task in the menu from the directory display.

Adding new user identities

You can allow users to start using the Fileserver immediately, using the identity GUEST supplied with the Fileserver. However, you will soon want to set up user identities and user profiles to suit the requirements of each user.

There are four ways of creating new users:

- Using the **New user** menu command
- Using the **Copy user** menu command
- Creating a batch of users
- Copying users from another Fileserver.

New user

To create a new user with the default user profile, move the pointer over the user directory display and press the menu button. Move the pointer across the option **New user** to display a writable icon for the user name and type a name, then press Return.

This creates a new user identity with the name you give. The new user has Normal privilege, the boot option set to None, and 64K of space allocated. A user directory and mail directory are created for the new user, using the same name. An icon for the new user appears in the user directory display.

Copy user

If you want a new user to share the same profile as an existing user, it is quicker to copy the existing user than to create new users with the default profile and change them.

To copy an existing user, move the pointer over the user icon and press the menu button. Move the pointer over the option **Copy User** to display a writable icon for the name of the new user, and type a name, then press Return.

This creates a new user with the same profile as the user you copied it from. The password, name of the user directory and mail directory are all copied from the old user identity. An icon for the new user appears in the user icon window. You can make adjustments to the profile of the new user (see *Setting user profiles*).

Creating group users

To create group users, you need to give a user name in the form:

```
groupname.username
```

For example, the user name

```
ITGroup.Jo
```

creates a user Jo in the group called ITGroup. You can create user root directories and mail directories, and set other user profile parameters as usual. If you create a group owner, this user will then own all others in the group. The diagram on page 14 shows a directory with a group called Subject containing GUser1 and GUser2. To create these you would need to give the names Subject.GUser1 and Subject.GUser2.

Creating a batch of user identities

Sometimes you may want to create a large number of users at once. This may be when you are setting up a new Fileserver, or when you are allocating user identities to a new class of pupils, for example. Instead of using **New user** or **Copy user** repeatedly and setting user profiles individually, you can create a batch of users from a text file, or copy a batch of user identities from another Fileserver.

To create a large number of users with default user profiles, you need to create a batch file of user names. Type a list of user names in an Edit file, with one name on each line. Do not include any punctuation, except the fullstop in group user names. Drag the text file into the Fileserver users display, and the Fileserver will create a user identity for each user name in the file.

Copying a batch of user identities

You can generate a list of user names as a text file by selecting some or all the users in a Fileserver users directory display and then using the **Textfile** option from the **Save** sub-menu. This is one way of copying user names from one Fileserver to another, but the newly created users will all have default user profiles. A better way of copying users from one Fileserver to another is using files of user definitions.

To create a file of user definitions, select the users you want to copy, and then use the **Selection** option from the **Save** sub-menu. If you want to copy all the users, use the **Users** option from the sub-menu instead. These commands create a datafile of user defintions. Call the file Users. To copy these user identities to another Fileserver, open !Server by holding down the Shift key and double-clicking on its icon in the directory display and drag in the file. The definitions will be used to create user identities with the same profile as they had on the original Fileserver.

You can look at and alter the profiles of users in the data file if you drag the file icon on to the !Manager icon on the icon bar. This opens a display for the user definitions.

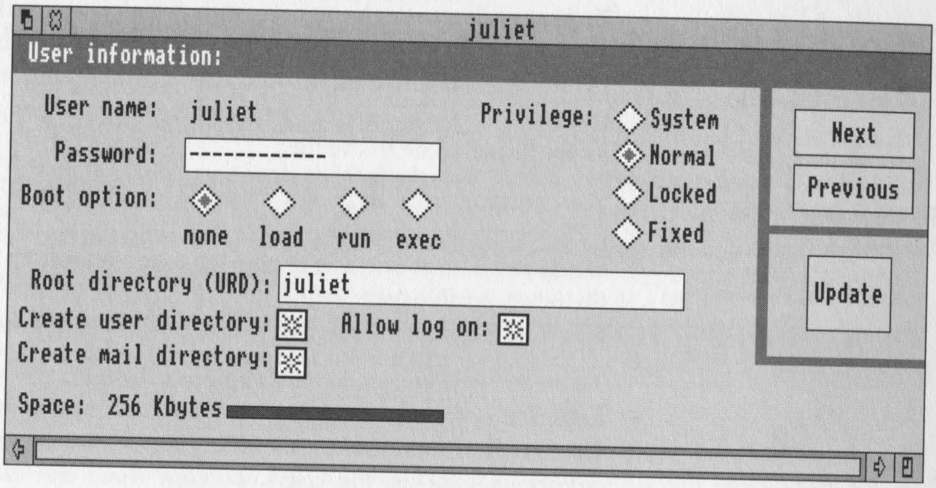
If you have two Fileserver user windows open on screen, you can select a group of users in one and drag them directly into the other. This also creates new users with the same user profile as the originals.

Setting user profiles

A user profile is a group of settings that define how a user may use the Fileserver. It includes:

- user name
- password
- boot option
- privilege level
- root directory name
- whether there is a user directory

- whether there is a mail directory
- whether the user identity can be used for log on
- how much space is allocated to the identity.



User name: juliet

Password: ------------

Boot option: ◆ none ◇ load ◇ run ◇ exec

Privilege: ◇ System ◆ Normal ◇ Locked ◇ Fixed

Root directory (URD): juliet

Create user directory: ☒ Allow log on: ☒

Create mail directory: ☒

Space: 256 Kbytes

You can set a user profile at any time; you are most likely to do so when creating a new user identity, but you can also change or just look at the profiles of existing users.

Updating several user profiles

If you need to update several user profiles, you can use the Next and Previous buttons in the user profile window to call up one user identity after another. When you have finished making settings for one user, click on Update, and then on Next or Previous to display details of the next user. The sequence in which user profiles will be displayed is taken from the order of user icons in the directory display. This is determined by the Display option you have chosen (order by Name, Privilege or station Number).

Password

A user's password is not displayed in the profile window, but you can delete it from here. This may be useful if a user has forgotten his or her password. Obviously, if you delete a user's password and don't tell him, he won't be able to log on as he will continue to use the password and it won't be accepted. (However, to prevent log on, click to remove the star from the 'Allow log on' options icon.)

Setting boot options

You can set a user's boot option to one of four settings:

- none
- load
- run
- execute.

This setting controls the action when the user logs on. The default is None, so even if the user has created a boot file, it won't be used. A boot file will be ignored, loaded, run or executed according to which of the settings you choose. If you set the boot option to load, run or execute and the user doesn't have a boot file, the error message `not found` will appear when he or she logs on.

Privilege level

There are four privilege levels:

- System: system privileged users can control the Fileserver, use !Manager to create and delete user identities and alter user profiles, start up and close down the Fileserver and print spoooler, and control the running of the server and spooler
- Normal: normal users own and can use their own directory (if they have one), set their boot option and change their password
- Locked: locked users own and can use their own directory (if they have one), but can't change their boot option or password
- Fixed: fixed users cannot look at or use files in any directory other than their own, and can't change their boot option or password.

A user identity created with the **New user** command has Normal privilege. You will probably want to use this privilege for most users.

Allow log on

If you ever need to prevent users logging on, you can click in the options icon marked 'Allow log on' to remove the star and they will not be allowed to use their identity to log on to this Fileserver (though this will not affect their right to use any other Fileserver on the network). When you want a user to be able to use the identity again, click to replace the star.

Root and mail directories

If you have created new users without a root directory and mail directory, you can later create these directories by clicking to place a star in the appropriate options icons of the user profile window. If you do create these, you can't delete them later just by altering these settings, but will need to delete the directory icons following normal RISC OS procedures.

Allocating space

By default, a new user is allocated 64K of space. You can change this by dragging the slider marked 'Space allocation' to any value between 0K and 1024MB. Users' space will be used up as they create and save files, and freed as they delete files.

The space allocation will be used only if you set Space accounting on from the !Server icon bar menu. This is described in *Setting !Server options* in the chapter *Monitoring use of the Fileserver: !Server*.

Deleting user identites

You can delete one or more user identities by selecting them and then using **Delete** from the **User 'name'** option on the menu. The user's root directory and mail directory will not be deleted; you will need to delete these separately. This gives you the chance to save any files from the user's directory that may be useful.

Backing up the Fileserver

Making back-up copies of Fileserver files

You should make regular back-up copies of the files on the Fileserver to guard against loss of information in the event of power failure, or accidental or deliberate misuse of the files. You can back-up onto:

- another hard disc
- a network filing system
- a tape streamer
- a SCSI unit connected via SCSIFS
- floppy discs.

It is a good idea to have three back-up copies of data held on the Fileserver. Each day, you should back up over the oldest copy. You will then always have the files as they were at the end of the previous three days, and if a user corrupts a file and does not realise it until after the day's back-up has been made, it is still possible to restore a recent version of the file from the previous set of back-up copies.

You will probably not need to back up all the files on the Fileserver. For example, some may be applications or standard programs, documents and style sheets that are never changed. You will only need a single back-up copy of these. You will need to back up users' files regularly, though.

Backing up onto another hard disc

If you have another hard disc unit available on the Fileserver station or on the network, you can make your back-up from the Fileserver onto this. Log on as a system privileged user and open a directory display for the second hard disc and one for the Fileserver root directory. To display the Fileserver root directory, use **Open $** in the Econet/Fileserver icon bar menu. You will need to make sure the copy options are set to overwrite existing files and directories with the same name. Suitable copy options are set by typing

```
*Set Copy$Options A N R
```

This makes these settings:

- `A`: retain the access rights set for the file or directory
- `N`: only copy the file or directory if it is newer than the same one with the same name on the destination disc
- `R`: copy all sub-directories and their contents.

There is more information on setting copy options in the *User Guide* supplied with your RISC OS computer in the chapter *Filing system commands*.

Copy all or some of the directories and files from the Fileserver root directory to the second hard disc using the usual RISC OS procedure.

Backing up onto a tape streamer

If you have a tape streamer, you can make back-up copies onto this. Consult the documentation accompanying the tape streamer for instructions.

SCSIFS

Back up onto a SCSI disc connected via SCSIFS in the same way as you would back up onto any other hard disc: open a directory display for the unit and drag files into it from the Fileserver root directory.

Backing-up onto floppy discs

You should only back up the Fileserver onto floppy discs if there is no other medium available to you. Before you begin to back up files from the hard disc for the first time, you will need a stock of formatted floppy discs (about 80 for a full 50Mb hard disc). The chapter *The Advanced Disc Filing System (ADFS)* in the *User Guide* supplied with your RISC OS computer explains how to format floppy discs.

Give the floppy discs consecutively numbered titles, and keep a note of which files and directories each disc contains. Write the date of the back-up on each disc, changing it whenever you re-use the third day's back-up copies.

Suitable copy options are set by typing:

```
*Set Copy$Options A N R
```

This makes these settings:

- `A`: retain the access rights set for the file or directory
- `N`: only copy the file or directory if it is newer than the same one with the same name on the destination disc
- `R`: copy all sub-directories and their contents.

There is more information on setting copy options in the *User Guide* supplied with your RISC OS computer in the chapter *Filing system commands*.

Copy all or some of the directories and files from the Fileserver root directory to the second hard disc using the usual RISC OS procedure.

A large user directory may need to be split over more than one disc. You can save disc space by using an archiving program such as !Spark, which is available on SID, Acorn's Support Information Database (see the copyright declaration at the front of this Guide for details of SID). This allows you to 'shrink' large files into a compact form for storage. Alternatively, you can use the Archive and Getback utilities for Model B and Master series computers. *The Filestore Network Manager's Guide* explains how to use these.

Restoring files

If you need to restore any files from the back-up copies, you can do this by copying them back into the Fileserver directory in the same way as you would load or copy a new file onto the Fileserver. If any files have been altered since the back-up was made, you will need to turn off the copy option N (only copy newer version of files) to restore the earlier versions of the files. Type

```
*Set Copy$Options A ~N R
```

to set suitable options.

Encouraging users to archive their work

As well as making regular back-up copies of the files on the Fileserver yourself, you should encourage users to make their own copies of their files onto floppy discs or the hard disc on their own machine. If they are using RISC OS stations, they can restore any of their archived files by copying the icons back into their user directories on the Fileserver.

Other management tasks

Controlling the filing systems exported

There are a few tasks you will need to perform occasionally for which you don't need to use !Manager. These are:

- Changing the station number of the Fileserver
- Changing the name of the Fileserver hard disc
- Controlling the filing systems and devices the Fileserver will make available (export) to users
- Making applications available to users.

Changing the Fileserver's station number

To change the station number of the Fileserver, use $.ArthurLib.Setstation from the command line or a command task window, just as you would for any other station. For example,

```
$.ArthurLib.SetStation 251
```

Users will not be able to communicate with the Fileserver after you have changed its station number, so make sure all users have logged off before you do this. Tell users the new station number so that they can log on to the Fileserver again after you have changed it.

Changing the Fileserver's hard disc name

To change the name of the Fileserver's hard disc, use **Name disc** from the hard disc drive icon bar menu, `*Namedisc`, from the command line or a command task window. For example,

```
*NameDisc 4 History
```

Reset the Fileserver after changing the name of the disc. Close it down and then restart it, and tell users the new name of the disc.

Controlling the filing systems exported

A Fileserver can export any of the filing systems available to it. This means that users will be able to save to or access files from other disc drives, CDROMs and so on. The supported filing systems are:

- any file-core compatible filing systems (eg ADFS, RAMFS, SCSIFS, NEXUS)
- CDFS
- NFS.

You can decide which filing systems to make available to users. To do this, hold down the Shift key and double-click on the !Server icon in the hard disc directory of the Fileserver. The directory contains a text file called Exports. Open this text file; it looks something like this:

```
|Device file for export of local file systems
|Filing systems, SWI prefix, Drive number, Mount point

|ADFS ADFS   0    $
ADFS  ADFS   4    $
ADFS  ADFS   5    $
SCSI  SCSIFS 4    $
NEXUS Nexus  4    $
RAM   RamFS  0    $
CDFS  CDFS   0    $

|Now for network based file systems

|Filing system, SWI prefix, Logon command

NFS   NFS    nfs:Mount -host  unix  etc/etc
NFS   NFS    nfs:Logon -host  unix  guest
NFS   NFS    nfs:Mount -host  unix  unix
```

All lines beginning with a vertical bar (|) are comment lines. With the file as it is here, any of these filing systems that you have will be exported. If you want to prevent export of a filing system, add a vertical bar in front of its name, and the line will be ignored, eg:

```
|CDFS CDFS  0     $
```

to prevent CDFS being exported. It does not affect the Fileserver if you leave in lines for filing systems that you don't have.

Filing systems will be exported in the order in which they appear in the list. The first in the list will automatically be used at logon for non-desktop users. If you are going to export the floppy disc drive, make sure this is not first in the list as it will become the default drive if it is.

You can add new filing systems to the list following the format described in the file, ie

```
Filing system       SWI prefix   Drive number  Mount point
```

for local systems, while network filing systems would have the following format:

```
Filing system       SWI prefix   Logon command
```

For example, to add a second hard disc drive 5 with the mount point '$.Teacher', you would need to add the following line:

```
ADFS   ADFS   5      $.Teacher
```

and to add a link to the mount name Geology on the host station unix you would need to add the following line

```
NFS    NFS    nfs:Mount    -host unix   Geology
```

Before altering the list of filing systems that may be exported, close down the Fileserver; restart it again afterwards. This is especially important if you are removing filing systems from the list.

Making applications available to users

You may want to store applications and printer drivers on the Fileserver so that users have access to them without needing to store them on their own hard or floppy discs. Some applications, and some versions of the Acorn printer drivers, keep scrap files within their directories. Information is temporarily stored in the scrap files when the applications are used. If more than one user tries to use an application loaded from the network there will be a conflict as each needs to store data in the same scrap file. There are two ways to avoid this problem:

- Users can redirect scrap file data to a local directory on their own machine, or
- Users can copy the application into their own local disc space before loading it. The scrap files will then be local and there will be no conflict.

If possible, encourage users to create a RAM disc and copy into this the applications and printer driver they want to use, then load them from the RAM disc instead of the network. The section *Using a RAM disc* in the chapter *Using the Fileserver from the desktop* explains how to do this.

If users on your network don't have sufficient space to copy applications into a RAM disc, they will need to load them from the network. You will need to give them a boot file that redirects wimpscrap files to a location in their own disc space. Include these two lines, with suitable pathnames, in their boot files:

```
*Set Wimp$Scrap pathname file
*Set Wimp$ScrapDir pathname directory
```

The example boot file for RISC OS users on the Support disc includes these lines. You can adapt it to give suitable pathnames for the file and directory.

Some applications write to scrap files in !System. You can avoid difficulties with this by encouraging users to copy !System into their local disc space before using applications or by changing the following lines in the !Boot and !Run files inside !System. To open !System, hold down the Shift key while you double-click on its icon in the directory display.

In the !Boot file, change the following line:

```
if "<Wimp$Scrap>" = "" then Set Wimp$Scrap <Obey$Dir>.Scrapfile
```

to:

```
if "<Wimp$Scrap>" = "" then Set Wimp$Scrap adfs::0.$.Scrapfile
```

In the !Run file, change the line

```
Set Wimp$Scrap <Obey$Dir>.Scrapfile
```

to

```
Set Wimp$Scrap adfs::0.$.Scrapfile
```

This redirects both to the floppy disc drive 0 of the machine running the application.

Disabling notify

If you are using the Fileserver on a network in a school, you may want to disable the Notify facility that enables users on the network to pass messages to each other. To turn off Notify, use the system call

```
SYS &4000E, &10 %100011111
```

You need to use this from each station you want to protect. To turn Notify on again, type:

```
SYS &4000E, 0, %100001111
```

If a user tries to send a message to a protected station they will get the error message `Station nnn not listening.`

You don't need to disable the Fileserver station itself as the Level 4 Fileserver does this automatically.

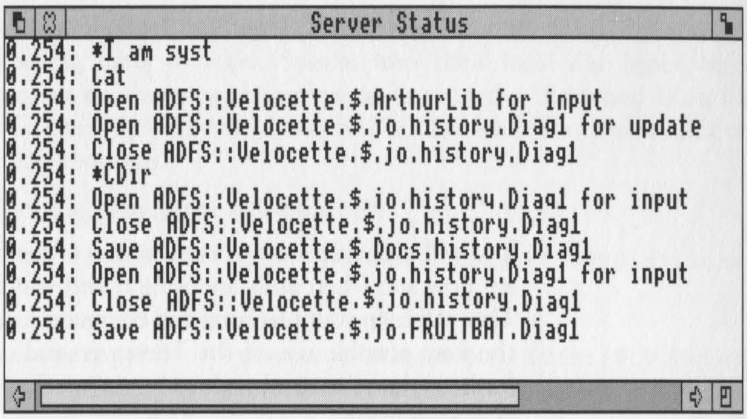
Monitoring use of the Fileserver: !Server

You will probably want to monitor use of the Fileserver in some way so that you can see how and when users are using it and which files are being used most frequently. This will help your planning and computer usage accounting and enable you to make the best possible use of the Fileserver and other computer resources. To use the facilities described in this chapter, you need to use the Fileserver station and have the Fileserver loaded.

The Fileserver status window

When you click on the Server icon on the icon bar, a status window appears showing the current status of the Fileserver. The status window reports the state of the server and each event performed by users as they happen. It is constantly updated as users work with the Fileserver. It reports:

- the current version number on start up
- *commands used by users (translated from the desktop activity from RISC OS stations)
- error messages sent to client stations
- users loading files
- users saving files
- users opening files, applications or directories
- users closing files, applications or directories
- users examining directories.



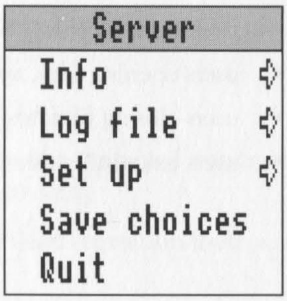
```
0.254: *I am syst
0.254: Cat
0.254: Open ADFS::Velocette.$.ArthurLib for input
0.254: Open ADFS::Velocette.$.jo.history.Diag1 for update
0.254: Close ADFS::Velocette.$.jo.history.Diag1
0.254: *CDir
0.254: Open ADFS::Velocette.$.jo.history.Diag1 for input
0.254: Close ADFS::Velocette.$.jo.history.Diag1
0.254: Save ADFS::Velocette.$.Docs.history.Diag1
0.254: Open ADFS::Velocette.$.jo.history.Diag1 for input
0.254: Close ADFS::Velocette.$.jo.history.Diag1
0.254: Save ADFS::Velocette.$.jo.FRUITBAT.Diag1
```

You can use the status window whenever you want to see how the Fileserver is being used. It isn't a good idea to leave the status window displayed all the time while the Fileserver is in use, though, as it will slow down other Fileserver operations.

If you just want to know how many users are currently logged on to the server, you can do this using the icon bar menu command **Set up**, described below.

The !Server icon menu

To display the !Server menu, move the pointer over the Server icon on the icon bar and press the menu button.

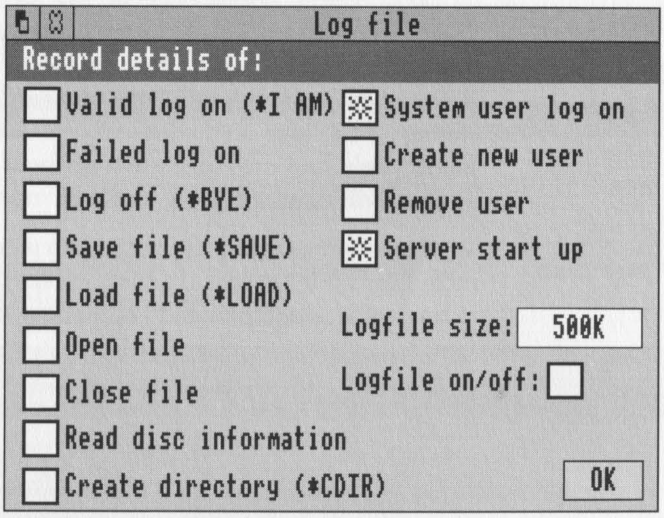


The commands in this menu allow you to do the following:

Info	Displays information about the version of the Level 4 Fileserver you have installed.
Log file	Allows you to set the type of event that is recorded in the logfile kept by the Fileserver (see below).
Set up	Reports details about the server's configuration and allows you to set various server options (see below).
Save options	Saves and implements the settings you have made with the **Log file** and **Set up** tasks.
Quit	Closes down the Fileserver and removes the Fileserver icon from the icon bar.

The logfile

The Fileserver keeps a logfile in which it records events as users access and make use of the server. You can choose which type of events are recorded in the logfile using the window displayed by the menu command **Log file**. The logfile is an ASCII text file stored in the !Server directory. To display the window for choosing events to log, select **Log file** from the Fileserver icon bar menu:



Log file

Record details of:

☐ Valid log on (*I AM)
☐ Failed log on
☐ Log off (*BYE)
☐ Save file (*SAVE)
☐ Load file (*LOAD)
☐ Open file
☐ Close file
☐ Read disc information
☐ Create directory (*CDIR)
☒ System user log on
☐ Create new user
☐ Remove user
☒ Server start up

Logfile size: 500K

Logfile on/off: ☐

You can choose to record each event of these types:

- Users logging on to the Fileserver
- failed attempts by users to log on to the Fileserver
- log off by users
- files saved onto the Fileserver

- files loaded from the Fileserver onto client machines
- files or directories opened by users
- files or directories closed by users
- all procedures that involve reading disc type information (eg, disc names)
- creation of a new directory
- logon by a user using the Network Manager's SYST user identity
- creation of a new user
- deletion of a user
- starting up the server from the desktop, the command line, or by a boot file.

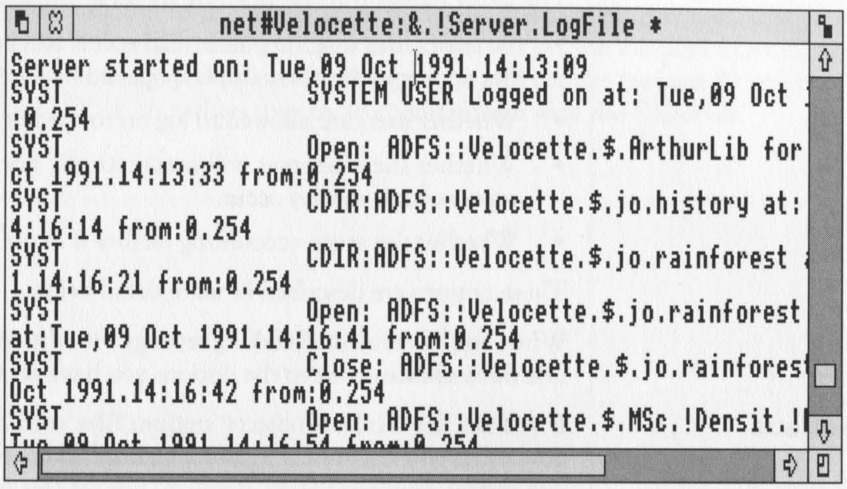
As information is constantly being added to the logfile, it could soon become large and take up a lot of space on the disc if it were not controlled. For this reason, the logfile is allocated a fixed space, and will cycle, overwriting its start when it reaches the maximum allowed size. To set the size of the logfile, use the writable icon on the logfile set-up dialogue box. The default file size is 500K.

When you have chosen the events you want to log in the file, click in the Logfile on/off icon to place a star here to enable the logfile. Click on OK to remove the dialogue box and then use **Save choices** from the icon bar menu to use the same settings when the Fileserver is used in future. The new settings take effect immediately, and each time a user performs one of the events you have chosen to log, a record will be added to the logfile giving the date, time and client station number.

Writing information to the logfile uses processing capability. The Fileserver will run more slowly if it has to make many entries in the logfile, so you should try to keep use of the logfile to a minimum to optimise performance of the Fileserver.

Looking at the logfile

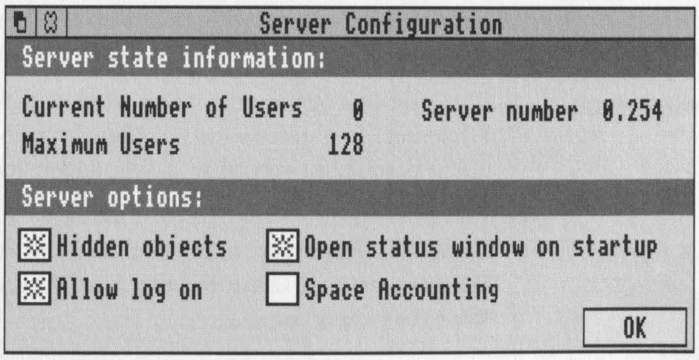
When you want to look at the logfile, hold down the Shift key and double-click on the !Server icon in the directory display to open a display for the files inside the application directory. One of the files will be a text file called ‘logfile’. You can look at this in Edit or 1st Word Plus.: For example



```
Server started on: Tue,09 Oct 1991.14:13:09
SYST                  SYSTEM USER Logged on at: Tue,09 Oct
:0.254
SYST                  Open: ADFS::Velocette.$.ArthurLib for
ct 1991.14:13:33 from:0.254
SYST                  CDIR:ADFS::Velocette.$.jo.history at:
4:16:14 from:0.254
SYST                  CDIR:ADFS::Velocette.$.jo.rainforest
1.14:16:21 from:0.254
SYST                  Open: ADFS::Velocette.$.jo.rainforest
at:Tue,09 Oct 1991.14:16:41 from:0.254
SYST                  Close: ADFS::Velocette.$.jo.rainforest
Oct 1991.14:16:42 from:0.254
SYST                  Open: ADFS::Velocette.$.MSc.!Densit.!
Tue,09 Oct 1991.14:16:54 from:0.254
```

Setting !Server options

The menu option **Set up** allows you to examine and set some server configuration options. It displays this dialogue box:



Server state information:

Current Number of Users 0 Server number 0.254
Maximum Users 128

Server options:

☒ Hidden objects ☒ Open status window on startup
☒ Allow log on ☐ Space Accounting

The top part of the dialogue box shows settings you cannot alter from here. These are:

- Current number of users logged on to the Fileserver.
- The number of the network the Fileserver host machine is attached to. If you only have one network, this number will be 0; if you have several networks, you can identify each by a different number.

The lower part of the dialogue box shows settings you can alter. These are:

- Whether files with no public read access will be treated as hidden objects and so not appear in directory displays opened by users.
- Whether users are allowed to log on to the Fileserver at the moment.
- Whether the Fileserver will automatically open a status window on start-up to report events as they occur.
- Whether the space accounting facility is in use.

These options are described in more detail below.

When you have finished making settings with this dialogue box, click on the OK icon. Use **Save choices** to keep the options you have set for the future.

Hidden objects

If you set the 'Hidden objects' option, files with no public read access and locked directories will not appear in directory displays opened by any user except their owner and system privileged users. If you do not set this option, the icons for the files with no public access will be visible, but users without system privilege (other than the file's owner) will not be able to open and use the files.

Allow logon

You will usually want this option set so that users can log on to and use the Fileserver. However, if you want to prevent any more users logging on to the Fileserver for any reason, turn this option off to make the Fileserver temporarily inaccessible. Users who have already logged on will be able to continue with their work, but any new users who try to log on will receive the message `Server not available`.

Open status window on startup

If you set this option, the status window will be displayed each time you start up the Fileserver. The status window differs from the logfile in that it is a temporary display, not a permanent record in a file, and it records events of all types, not just those chosen from the logfile dialogue box.

When the Fileserver starts up, the status window shows the version number of the Fileserver you are using and the date. As users log on and work, the window reports what they are doing.

Space accounting

When space accounting is on, users can save files in their directory until they have used all the space you have allocated to them. They will then need to delete files to make room for any new material they want to save, so that they are always working within the allocated space. If you turn space accounting off, the Fileserver does not keep track of how users are using space and they can save files freely even when they have exceeded the space you have allocated to them.

Quit

Use **Quit** to close down the Fileserver. This closes users' files. Any users who try to log on to the Fileserver after you have used **Quit** will get the message `Station nnn not listening`. Any users still logged on will get the message `Station nnn not listening` when they try to communicate with the Fileserver.

Managing the print spooler: !Spooler

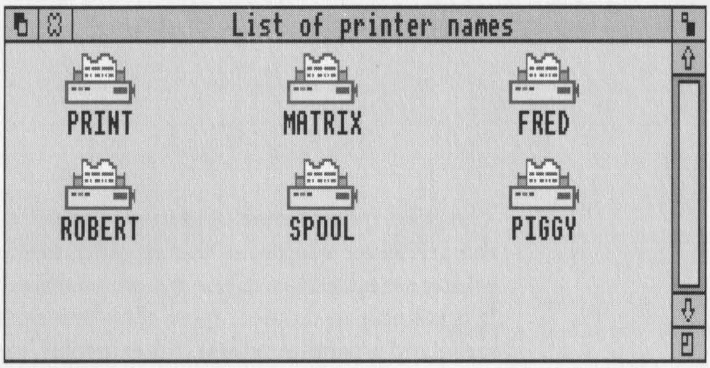
The print spooler enables users on the network to send files to a printer attached to the Fileserver station or to any other machine running !Spooler. Files sent to the printer are added to a queue and are processed in turn as the printer becomes available. It is possible to connect more than one printer to the machine running !Spooler (a serial and a parallel printer, for example), and it is possible to define more than one set of characteristics for the same printer device. Each would then appear to the user as a separate printer with its own identity. You may want to use this facility to set a printer to have, for example, a high resolution on one printer identity and a low resolution for draft material on another.

To use the print spooler, you need to load !Spooler on the host machine and connect an appropriate printer. The !Spooler application then allows you to manage the spool queue and set certain printer characteristics. Users need to load a suitable printer driver from their own stations. You might want to keep printer drivers in an applications directory on the Fileserver, but advise users to copy them into their own disc space before using them.

Loading !Spooler

You can run !Spooler from the same machine as !Server, or from a different one. To load !Spooler, double-click on its icon in the directory display. The Spooler icon appears on the icon bar with the caption `Ready`:

You can set up to eight real or logical printers to be controlled by the spooler. To see a window listing the printers available, click on the !Spooler icon on the icon bar.

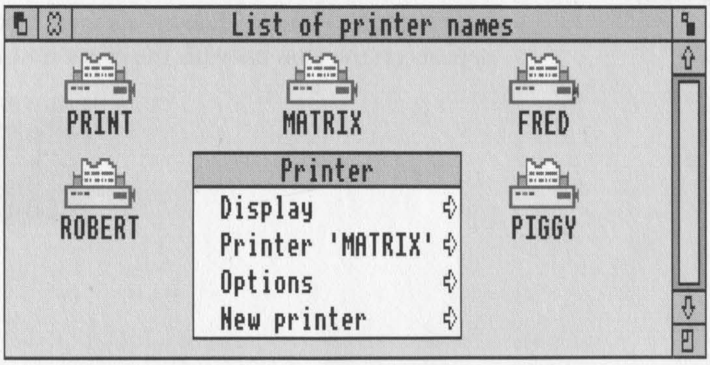


From this window, you can set up and control the printers handled by the spooler. The menu commands used to control the printers are described below.

If you double-click on one of the printer icons in this window, a status window for that printer's queue appears. The status window is described later in this chapter.

The spooler menu

You can control the display of icons, create a new printer definition or modify an existing printer definition using commands in the menu displayed from the spooler display. If you press the menu button when the pointer is in the display and a printer is selected, or when the pointer is over a printer icon, this menu is displayed:



Display

Allows you to control the display of printer icons.

Printer 'name'	Allows you to set various options for the selected printer icon.
Options	Allows you to state whether the selected printer icon is for a PostScript printer, whether a status window will be opened when the spooler is started up and whether the printer will begin printing a long file before the file has finished spooling.
New printer	Lets you give a name for a new printer definition.
Banner	Allows you to give a banner to be printed at the start of each job (see below).

If there is no printer selected, and the pointer is not over a printer icon, the option **Printer 'name'** is not available.

Controlling the display of the spooler display

You can choose how the printer icons are displayed using the **Display** command in the spooler display menu. You may choose to show **Large icons**, **Small icons** or **Full info**.

Controlling printer definitions

The Level 4 Fileserver is supplied with five printer definitions already set up. You can create and use up to eight printer definitions. This allows you to set up a serial and a parallel printer connected to the station running !Spooler, and to use network printers or files. There is always one printer definition called 'Print'.

Creating a new printer definition

To create a new printer definition, move the pointer over the option **New printer** in the spooler display menu and off to the right to display a writable icon for the new printer name. Type a name up to six characters long and press the Return key. An icon for the new printer definition appears in the display (unless you already have eight printers, in which case another is not allowed).

The name you give can be used by users sending jobs to the printer, and is shown in the !Spooler status window for the printer

Setting options for a printer

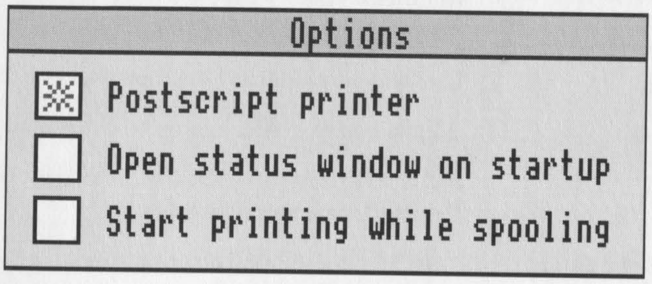
To set up a definition for the new printer, use the menu commands **Printer 'name'** and **Options**.

If you want to rename the printer definition, move the pointer off to the right of the **Rename** option and type a new name in the writable icon, then press the Return key.

Set the printer to Parallel, Serial, Network or File by clicking on the appropriate line of the menu. There will be a tick against the selected one. If you choose Parallel or Serial, the printer must be connected to the appropriate port of the spooler station. If you choose Network or File, you must then give the station number or name of the printer on the network, or the name of a file to receive printed output. If you use a file, each print job sent to it will overwrite the existing contents of the file.

If a user is working on the station running !Spooler, they can send files to a spool queue by setting output from their printer driver to file and directing it to the !Spooler directory for the printer definition they want to use.

You can set extra choices with the **Options** command, which displays this dialogue box:



Options

☒ Postscript printer

☐ Open status window on startup

☐ Start printing while spooling

Click on the appropriate option icons to place a star beside each option that you want to set on.

Set `Postscript printer` on if you want to configure the spooler to manage a PostScript printer. The spooler will then send a header file in front of data from non-PostScript applications (such as 1st Word Plus) which will enable the printer to interpret and print the data file. This file is a text file, called PSHeader. It is stored inside the !Spooler directory.

If you set the next option on, a spooler status window for this printer will be displayed whenever you load !Spooler (the status window is described below). You can remove the status window at any time by clicking on its Close icon, and you can re-display it by clicking on the printer icon in the spooler directory display.

The final option instructs the printer to begin printing before the whole file has been spooled. This may be useful if users are likely to send very long files to the printer as it saves time.

When you have chosen the printer port, station number or file name, and have set any other options you want, use **Save choices** to keep your selection.

Defining a banner

A banner is a piece of text which will be printed at the start of each page of a print job. If you want to define a banner, display the menu and move the pointer over **Banner** and off to the right to display a writable icon for the banner. Type the text you want to use and press Return. It may be up to 128 characters long. The banner may be text that will be printed, or it could be a PostScript command. PostScript printers will not understand a banner that is anything other than a PostScript command.

The banner will be used at the start of each job printed using the spooler you have set it for. You can also set headers and footers that will appear at the start and finish of each print job (but not of each page). This is described below.

You can remove a printer definition by selecting its icon and then choosing **Delete** from the Printer sub-menu. The printer icon will disappear from the display, and the printer will no longer be available to users. If there are any jobs in the queue these will not be printed.

When you delete a printer definition, the directory bearing its name inside !Spooler is also deleted. This directory is used to store spooled files, and will no longer be needed if you have deleted the printer definition.

Defining headers and footers

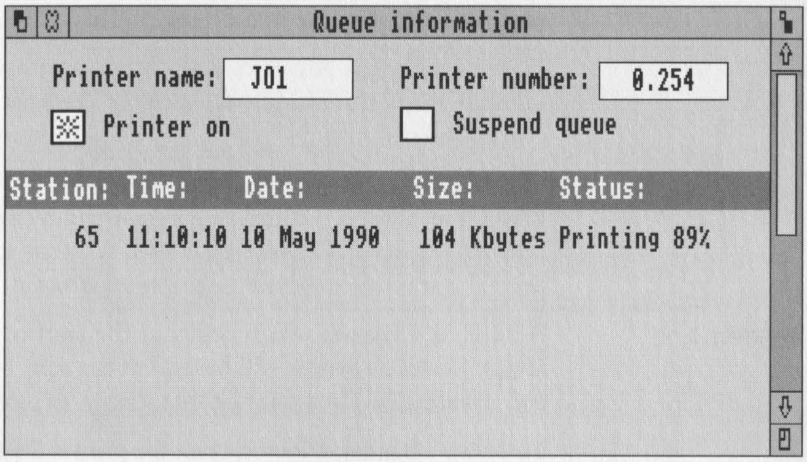
As well as a banner which prints at the start of each job, you can define a header and/or footer. A header will be used at the start of each print job, and a footer at the end of each job. These may be text strings, or printer commands.

To define a header or footer, open the printer definition directory inside !Spooler and edit the text file Header or Footer. To open !Spooler, hold down the Shift key while you double-click on its icon in the directory display.

!Spooler status windows

When you click on a printer icon in the spooler display, a spooler status window for that printer appears. This reports the state of the print queue and allows you to manage the queue. The status window shows:

- the printer name and number (which you can't alter from this window)
- whether the printer is on (ie jobs can be sent to the printer)
- whether the queue is suspended (ie jobs are not printed, but remain in the queue waiting)
- details of jobs in the print queue, showing the number of the station that originated the job, the time and date it was started, the size in bytes of the file and whether the job is pending, printing or suspended.



Printer name: J01

Printer number: 0.254

☒ Printer on

☐ Suspend queue

Station:	Time:	Date:	Size:	Status:
65	11:10:10	10 May 1990	104 Kbytes	Printing 89%

You can turn the printer on and off by toggling the `Printer on` setting. If you turn the printer off, printing will stop immediately. Printing will restart when you turn the printer back on. Alternatively, you can halt printing one job using the **Stop printing** option from the printer driver sub-menu on the client machine.

You can suspend the queue temporarily using the `Suspend queue` setting. Any job which is being printed will continue to print, but the next job will not start to print when the current job has finished. Users can continue to send jobs to the queue, but none will be printed until you turn off **Suspend queue** to restart the queue.

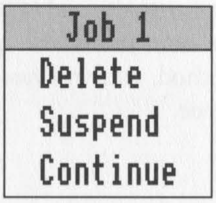
The list of jobs in the queue begins with the most recently added job. The file that is currently being printed will always be at the end of the list. If there are too many files for you to be able to see all the details at once, use the scroll bar to move through the list.

When the printer is printing a file from the queue, the status window shows how much of the job has been done by displaying an hourglass with a 'job done' percentage. If the printer is set so that it does not start printing until it has received the whole file, this shows the proportion of the whole file that has been printed. However, if you have set the spooler to start printing before spooling has finished, this figure won't be accurate until all the job has been spooled, since the spooler can't tell how long a document is until it has received it all. The status window also reports the percentage of header and footer files printed as they are processed; take care not to mistake this for the figure relating to the main part of the print job.

You can display a status window for each queue. However, displaying status windows uses processing power, so the spooler will run more quickly if you do not leave the status windows on screen unnecessarily.

Managing the queues

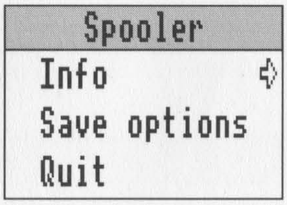
When you have a status window on the screen, you can display a menu by pressing the menu button with the pointer over one of the jobs in the queue:



This menu allows you to remove items from the queue (using **Delete**), and to suspend and restart a single job in the queue. If you suspend a job, this one will not be printed until you use **Continue** to add it back into the queue. You can delete any job, including the one currently being printed, and it will be abandoned.

The !Spooler icon bar menu

Spooler options are saved using the **Save options** command in the !Spooler icon menu:



Info	Gives details about the release of !Spooler you have.
Save options	Allows you to save the settings you have made from the spooler display.
Quit	Removes the spooler.

Closing down the spooler

To close down the spooler, select **Quit** from the spooler icon bar menu. This removes the spooler icon from the icon bar and closes down all the queues. If any jobs are being printed, they stop. However, the spooler stores the files in the queues on disc and will print the remaining jobs when it is next loaded.

If you want to close down a single queue, or close some and leave others on, use the `Printer on` switch in the status window for each printer definition.

Problems with BBC and Master applications

A few applications for BBC and Master Series computers print one line at a time, using the commands VDU2 and VDU3 to initiate and end printing of each line in turn. If you try to print from one of these applications using the print spooler, it is possible that other print jobs will be printed between lines. This is because the spooler interprets the end of line command as the end of the print job, and goes on to process the next job in the queue. If you want to print from an application that uses this method, you will need to do so when no other users are sending jobs to the print queue.

Part IV: Users and the Fileserver

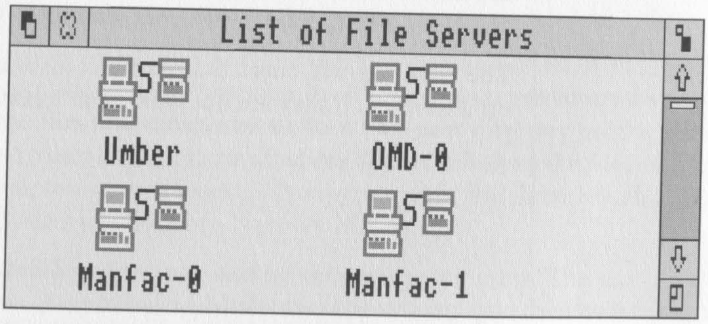
Using the Fileserver from the desktop

This chapter explains how the Fileserver appears to users, and how they can log on to and make use of the Fileserver and print spooler from the RISC OS desktop. If you wish, you may photocopy this chapter and give a copy to each desktop user of the Fileserver.

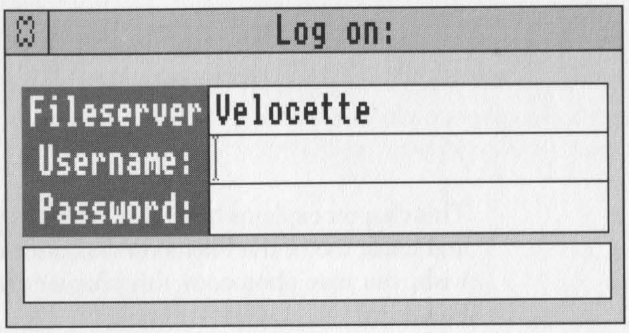
The instructions for users given in this chapter apply to people using client machines running the RISC OS desktop; if you need to use the *commands, look in Appendix A for a summary of their functions. The *User Guide* supplied with your RISC OS computer and the *Econet Level 2/3 File Server User Guide* give further information on *commands to use with the Fileserver (see *Network Filing System commands*).

Logging on

The computer on which the Fileserver software is installed is called the *Fileserver*; computers linked to it and able to use the Fileserver are called *client* machines. Before you can use the Fileserver on a client machine you need to log on to it using the Econet logon dialogue box. If there is more than one Fileserver on your network, you will need to choose one to log on to. Use **FS List** in the Econet icon bar menu to open a display showing the Fileservers available. There will be an icon for each Fileserver, with the name below or beside each one. If a Fileserver station has more than one storage device available for you to use (for example, an extra hard disc, a RAM disc or a SCSI hard disc), there is an icon for each device in the FS List window. You can log on to whichever device you want to use.



If you click on one of the Fileserver icons, the logon dialogue box will appear, with the Fileserver name already in the first writable icon. For example:



Fileserver Velocette
Username:
Password:

You can also display this dialogue box by:

- clicking on the Econet icon on the icon bar, or
- choosing **Logon** from the Econet icon bar menu.

A default Fileserver name will appear in the first writable icon if you use either of these two methods. If there is more than one Fileserver on the system, you may need to change the name to show the Fileserver you want to use. The section *Setting other options* later in this chapter explains how to set the name of the server you use most frequently to be the default name.

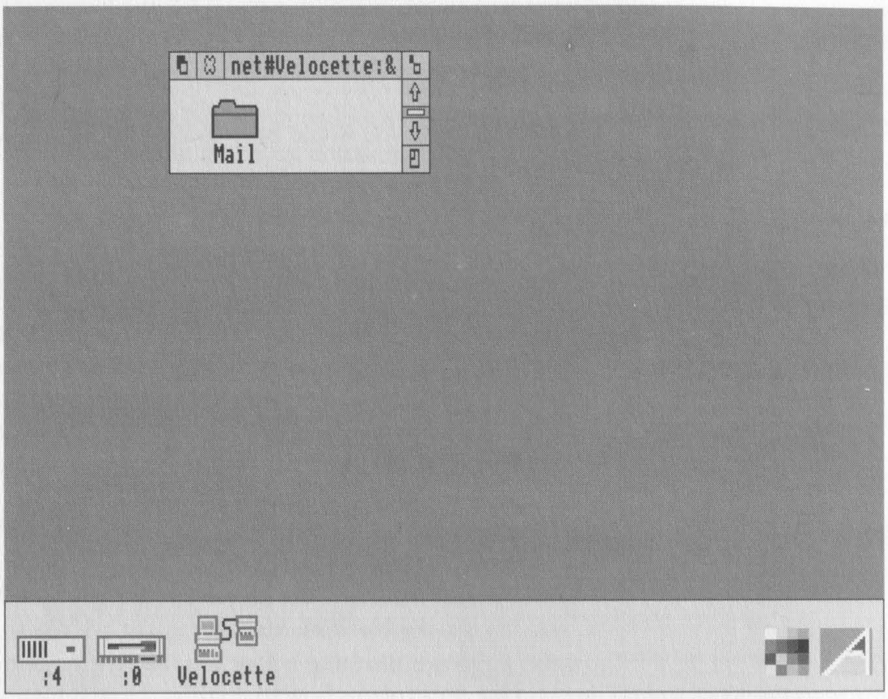
The next two writable icons in the dialogue box are used to verify your user identity.

User identification

In the second writable icon, type your user name as set by the Network Manager. In the last writable icon, type your password, if you have one. Your password will not appear on the screen as you type: this is to prevent other users seeing your password and being able to log on with your identity.

The Fileserver will check that your user name and password are valid, and will log you on if they are. If they are not valid, your logon will fail.

When you have logged on successfully, a directory display will appear (see below), and the Econet icon on the icon bar will change to show the name of the Fileserver you have logged on to.



User directory

Users generally have their own directories on the Fileserver in which they can work and save files. Your own root directory will have the same name as your user name. It is represented on screen by the characters `:&` so if you logged on to a Fileserver on a hard disc called History, the directory display for your directory would have the title `History:&`.

Once the Fileserver has checked your user name and password, it will look for the user directory corresponding to your identity. If it finds one, a directory display will appear showing the files and directories in your own root directory on the Fileserver. If it doesn't find a user directory, the directory display will show the files and directories in the root directory of the Fileserver (you won't 'own' this directory, though, unless you have the System privilege of a Network Manager).

Group users

The Network Manager may also set up some group users. The group will consist of several users grouped inside a directory. Theser users own their own files and have the usual rights to them.

If your directory is part of a group, your username will have two parts, incorporating your own user name and the group name in the format:

```
groupname.username
```

For example, if the group is called ITGroup, your name could be

```
ITGroup.Jo
```

This is the name you would have to type in the username writable icon in the logon dialogue box.

File ownership

In general, you can look at, change and delete any files in your own user directory, but cannot change or delete files owned by someone else, though you may be able to look at them. Some files and directories may be hidden from you completely, so that you do not even see their icons in the directory display.

Using files and programs

You can use files and programs on the Fileserver in exactly the same way as you would use them directly from your own computer. For example, if a form letter has been set up to be available on the Fileserver, you can double-click on its icon in the directory display to load it. It loads from the hard disc on the Fileserver host machine into your own machine. The advantage is that many users can use the same formats and they don't need to use up space on their own floppy or hard discs storing a copy of each. If you are going to load applications like this, let the Network Manager know, because you will need a suitable boot file which the Network Manager will be able to create. Alternatively, the Network Manager might ask you to copy applications into a RAM disc on your own machine before you load them. The section *Using a RAM disc* later in this chapter explains how to do this.

When you want to save a file in your Fileserver directory, drag its icon into your root directory or a directory in your root in just the same way as you would if you were saving a file on your own floppy or hard disc. If you try to save a file in someone else's directory, and you do not have the privilege to do so, you will get the error message `Insufficient access.`

Using files from other users' directories

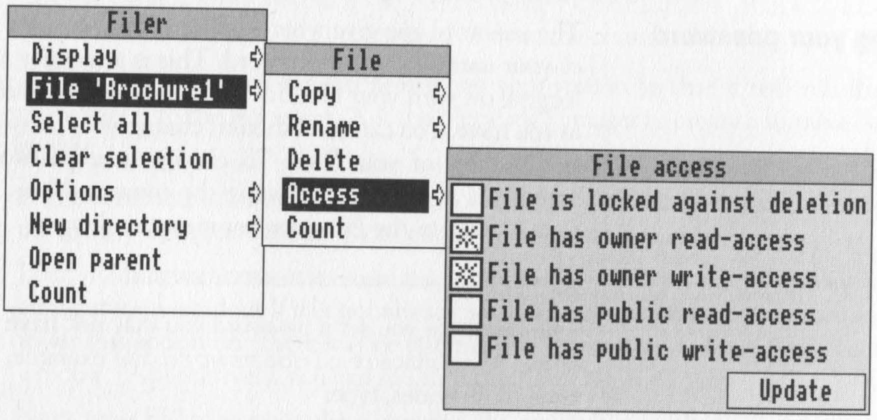
You may sometimes need to use a file that is stored in another user's directory. You can generally look at but not save any changes to a file in someone else's directory. However, you can change the file and then save it in your own directory by dragging the Save file icon to your own directory display.

To load a file from another user's directory, you need to move up through the directory structure from your own directory into the root and then into the other person's directory. To display a directory display for the Fileserver root directory, use the command **Open $** in the Econet/Fileserver icon bar menu. The directory display will show all the user root directories. Double-click on the directory icon for the user whose files you want to use. There may be some icons missing from the directory display: these are for files that the owner has locked against all public access. If you try to load an application from someone else's directory, it will generate an error message if the owner has not given public read access to it and the files it uses. There are other reasons why you may get an error doing this, too. Ask the Network Manager for advice if you want to load applications from another user's directory.

Setting the access rights to your own files

Usually, if you create a file in your own user directory, you will be able to look at it and alter it at any time and even delete it. By default, other users will have no access to your files.

You can set the access you want other people to have to your files using the **Access** command from the file's directory display menu. Select the icon in the directory display and choose the **File *filename*** option in the menu, then use **Access** in the sub-menu to display this dialogue box:



☐ File is locked against deletion
☒ File has owner read-access
☒ File has owner write-access
☐ File has public read-access
☐ File has public write-access

Click to place a star in the options icon beside each setting you want to make. The Owner rights set what you can do with the file; the Public rights control what other users can do with the file. You can lock the file against deletion to prevent you accidentally deleting it yourself, but you don't need to set this to prevent other users deleting your file as it is locked to them anyway.

(If you have a version of RISC OS later than 2.00, the access command may work differently; look in the *User Guide* supplied with your RISC OS computer for details.)

If you allow public write access to your file, other users will be able to alter it without your knowledge. If you allow public read access only, they will be able to look at the file but not alter it. If you do not allow any public access at all, and the Network

Manager has made the appropriate setting, the file will not even appear as an icon in your user directory when the directory display is displayed by other users (though it will be visible when you display the directory display yourself, of course, or when the Network Manager logs on as a privileged user and looks at your directory). Never completely remove the access rights to your files by denying read and write access to yourself as well as to others.

You cannot specify the access rights to a directory, only to the files within it, but you can lock a directory against deletion using the **Access** option in the menu. If you lock a directory, and the Network Manager has enabled the hidden objects option, the directory will become a hidden object and will not be visible to other users.

The access rights described above apply to most users. In some cases, the Network Manager may give you a different user status which prevents you resetting your password or boot option (described below), or looking at any directories other than your own. If you are not sure about your privileges, ask your Network Manager.

Setting your password

The password you give when you log on is compared by the Fileserver with its record of your user name and password. This is a security procedure to prevent other users logging on with your identity and consequently gaining the same access to your files as you have. You can (and should) change your password occasionally to help preserve the security of your files. To change your password, you need to use the *Pass command. Press F12 to move to the command line, or use the option **Task window** from **Create** in the Edit icon bar menu, and type:

```
Pass oldpassword newpassword
```

The first time you set a password you may not have an old password, so use the null string `""` in place of *`oldpassword`*. For example, to set your password for the first time to Hebrides, type:

```
Pass "" Hebrides
```

If you later wanted to change this to Shetland, you would type:

```
Pass Hebrides Shetland
```

Your password must be at least six and not more than 22 characters long.

If you get the message `File pass not found`, you are using ADFS; the *Pass command is a network filing system command and is not recognised by ADFS. Type `Net` at the command line to switch to NetFS and then try again.

You can hide your password while you are typing it in to prevent anyone else seeing it as you type. To do this, type `Pass` and then press Return; the cursor will move down a line, and everything you type will be hidden until you press Return again. Your password won't be displayed on the screen at any point.

When you are choosing a password, do not select something very obvious that could be guessed by someone else. Do not, for example, use the date of your birthday, the name of a member of your family or a pet, your telephone number, or the registration number of your car.

Setting boot options

If you have Normal or System privilege, you can create a boot file that will be run each time you log on to the Fileserver if you often want to use the same options or applications each time. To do this you will need to:

1. Copy a suitable boot file into your user root directory.
2. Use !Configure to set Auto Boot on, or use `*Opt 4,2` from the command line
3. Set the default filing system to be NetFS using `*Configure FileSystem Net` or `*Configure FileSystem 5` from the command line.

The following instructions explain how to set your station so that it will run them when you log on to the Fileserver. Ask the Network Manager to create a suitable boot file for you.

Setting the station to run the boot files

To set the computer to run your boot files, you need to set Auto boot on. You can do this using the *Opt command or !Configure.

1. Load !Configure onto the icon bar and double-click on it to display the configuration window. If it is not already set, click on the Auto boot options icon to set this option on (there will be a star in the icon when it is on). Remove the window. (Alternatively, you can use the command `*Configure Boot`.)
2. Next, press F12 to move to the command line, or use **New task** in the system icon bar menu, and type:

   ```
   Opt 4,3
   ```

   to set the computer to run your boot file each time you log on to the Fileserver. Press Return to go back to the desktop from the command line. You must use this command when you are already logged on to the Fileserver and are in your user directory.

The boot and desktop boot files must always be stored in your user root directory on the Fileserver. The boot file will only be run when you log on to the Fileserver, not when you turn on or reset your machine.

Setting other options

If you always want to use the same Fileserver, you can use the !Configure window to set the default server name in the logon dialogue box to the Fileserver you want to use. (This is only useful if there is more than one Fileserver on the network; if there is only one, and its number is 0.254, this will appear as the default anyway).

Display the !Configure window and type the station number of the Fileserver you want to use in the writable icon marked 'Econet Fileserver'. In future, whenever you click on the Econet icon or use **Logon** from the Econet menu, this station number will appear in the first writable icon of the logon dialogue box.

If you always want to use the network printer, you can set the default printer from the !Configure window as well. Click in the box beside the option icon marked 'Econet Printer Server' to choose this as the default printer. You will also need to set up a suitable printer driver before you can send files to print. This is described below, in *Using the print spooler*.

The settings you make with the !Configure application are specific to the station you use and are not remembered with your user identity if you use another station.

Using the print spooler

The Fileserver print spooler allows users on the network to send files to a printer which will process each in turn. Your files are added to a queue, and will be printed when the printer has finished the other jobs ahead of yours in the queue. You can continue to use your station after you have sent your print job and while it is waiting in the queue and being printed.

Before you can send files to the printer, you need to load a printer driver. You can load this from your own hard or floppy disc, or it may be stored in an application directory on the Fileserver. If you want to use a printer driver stored on the Fileserver or elsewhere on the network, copy it into your own disc space first. You can copy it onto a hard or floppy disc, or create a RAM disc which will store it temporarily. This is described below in the section *Using a RAM disc*.

Choose the printer driver that is appropriate to the printer you are going to use:

- PrinterDM for a dot matrix printer
- PrinterLJ for a LaserJet printer
- PrinterPS for a PostScript laser printer
- Printer IX for a colour dot matrix printer.

Load the printer driver and then display its icon bar menu. Click on the option **Network** with the adjust button to select the network printer and leave the menu displayed. Now move the pointer across the command **Network** to the right to display the writable icon for you to give the station number or name of the Network printer.

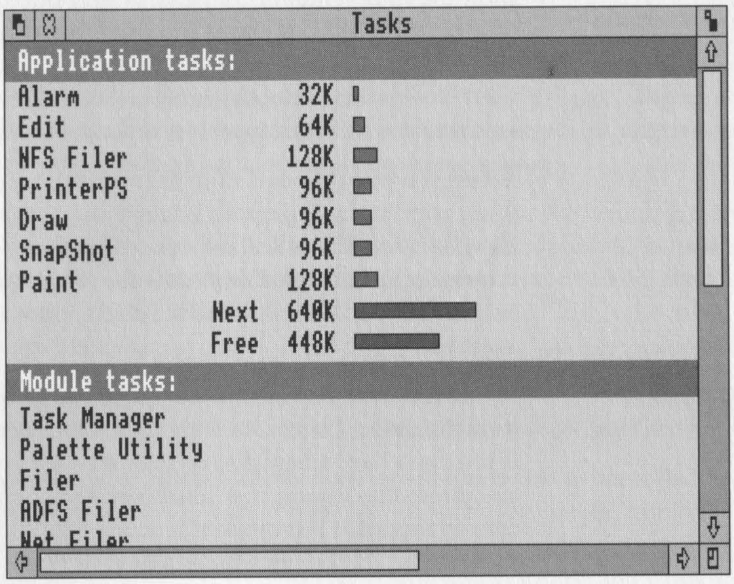
Type the name or station number of the printer you want to use and press Return. Use **Save choices** to set this for future use as well. The printer icon on the icon bar will show the station number or name of the printer you have chosen. You can make other printer driver settings just as you would if the printer were connected directly to your own computer. The *User Guide* for your computer explains how to do this. When you want to use a different printer of the same type, change the settings. If you want to use a printer of a different type, you will need to load another printer driver.

When you want to send a file to the printer, drag its icon to the printer icon or send it to the printer using a print command within the application as you normally would. (For 1st Word Plus files and other files that do not use the standard Acorn printer drivers, follow the usual procedure for printing these files and do not drag them to the icon bar.) Your file will be added to the print queue and printed when the printer is available.

Using a RAM disc

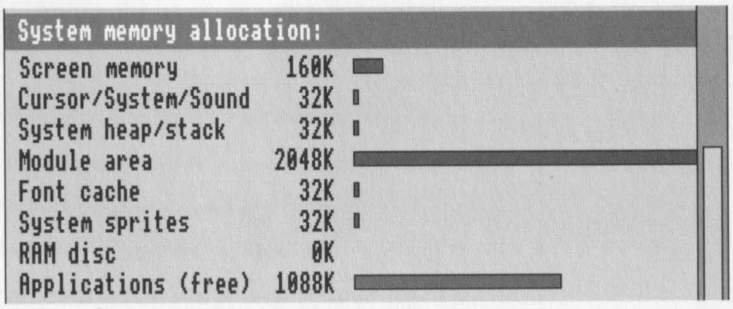
Sometimes you may want to use programs and printer drivers stored on the network. In many cases, it is best to copy these onto your own machine before you load them. If you don't have a hard disc on your machine, you can create a RAM disc to hold files and directories during your session on the computer. A RAM disc is a way of storing data temporarily; it is quicker to access files and programs stored on a RAM disc than those stored on the network or a hard or floppy disc.

To create a RAM disc, menu on the Archimedes system icon at the right end of the icon bar and choose **Task display**. This window will appear:



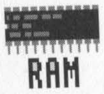
```
Tasks
Application tasks:
Alarm          32K
Edit           64K
NFS Filer     128K
PrinterPS      96K
Draw           96K
SnapShot       96K
Paint         128K
        Next  640K
        Free  448K
Module tasks:
Task Manager
Palette Utility
Filer
ADFS Filer
Net Filer
```

Use the scroll bar to move down through the task display window until you see the RAM disc line.



```
System memory allocation:
Screen memory          160K
Cursor/System/Sound     32K
System heap/stack       32K
Module area           2048K
Font cache              32K
System sprites          32K
RAM disc                 0K
Applications (free)   1088K
```

Click to the right of this line, and drag the bar that appears to allocate space to the RAM disc. A RAM disc icon appears on the icon bar.



Click on this to open a directory display. You can copy applications into this just as if it were any other kind of disc. However, the RAM disc will disappear when you turn off or reset your machine, so don't use it to store any of your work, only use it for copies of applications and printer drivers kept on the network or on ADFS discs elsewhere.

Logging off

When you have finished using the Fileserver, log off by selecting **Bye** from the Econet/Fileserver icon.

Fileserver close-down

Sometimes the Network Manger may want to close down the Fileserver while you are working. Your files will be closed automatically. You may get a message warning you that the Fileserver will be shut down, giving you time to finish and tidy up your work.

Using the Fileserver from the command line

If you are using the Fileserver from the command line on a BBC or Master series computer, the commands you need to use will be the same as those used with any of Acorn's previous Fileservers. Full details of these commands are given in the *Econet Level 2/3 File Server User Guide*. A summary of the commands is given here in Appendix A.

The Support Disc supplied with the Level 4 Fileserver contains some useful example boot files for BBC and Master series computers.

Appendix A: *Command summaries

The following commands can be used if you are not using the Fileserver from the desktop. For more information on these commands, look in the *Econet Level 2/3 File Server User Guide*, the *User Guide* supplied with your computer, or the *FileStore Network Manager's Guide*. Not all these commands are available on all station types. The section *Command types and locations* in this appendix shows which commands are available on each type of station. Network commands are only available when you are using NetFS; to switch from ADFS to NetFS, type `Net` at the command line.

In addition to these commands, the utility NETMGR is provided on the Fileserver Support disc for use with BBC and Master Series stations. This utility is described below in the section *Using NETMGR*.

`*ACCESS`

Change access to a file or directory:

`*ACCESS` *`filename owner/public`*

The owner's and public access rights must be given as a combination of the letters `R` (read access), `W` (write access) and `L` (locked), with the owner's and public access divided by a backslash (`/`). For example, `RWL/R` would give the owner read and write access and other users read-only access and would lock the file against deletion by anyone. File are locked against deletion by anyone but the owner as default, so you don't need to specify /L. If the Hidden objects option from !Server is enabled, locked files and directories will not be visible to users who don't have the privilege to use them.

`*APPEND`

Add keyboard input to a file:

`*APPEND` *`filename text`* adds text to the end of the named file

Press Escape when you have finished adding input to the file.

`*BUILD`

Create a file from keyboard input:

`*BUILD` *`filename text`*

Press Escape when you have finished adding input to the file.

*BYE

Log off from the Fileserver:

`*BYE`

*CAT

List the contents of a directory:

`*CAT`	lists the contents of the current directory
`*CAT dir`	lists the contents of the named directory.

*CAT

Create a directory:

`*CDIR $.dir`	creates a directory with the given name on the same disc
`*CDIR :disc.$.dir`	creates a directory with the given name on the named disc.

*CLOSE

Tidy up files after an error:

`*CLOSE`

*COPY

Copy files from one directory to another:

`*COPY source destination`	copies one file
`*COPY wildcard destination`	copies several files
`*COPY dir destination R`	copies a directory and all the files and sub-directories it contains.

For information on the additional copy options available, refer to the *User Guide* supplied with your RISC OS computer.

*COUNT

Reports the size of the file(s) specified:

`*COUNT id R`	shows the size of a user directory
`*COUNT :disc.$.dir`	shows the size of the directory `dir` on the disc called `disc`.

*CREATE

Create an empty file:

`*CREATE filename`

*DATE

Display the date:

`*DATE`

*DELETE

Delete a file:

`*DELETE filename`

You can only delete one file at a time with this command; use *WIPE to delete several at once.

`*DIR`

Change to a different directory:

`*DIR`	moves to the user root directory
`*DIR dir`	moves to the directory called `dir`
`*DIR :disc.$.dir`	moves to the directory called `dir` on the disc called `disc`.

The command `*DIR ^` is not supported by the Level 4 Fileserver.

`*DISCS`

Display the titles of the available discs:

```
*DISCS
```

`*DUMP`

Display a file's contents as hexadecimal bytes on the lefthand side of the screen and an ASCII interpretation on the righthand side:

```
*DUMP filename
```

Full details of this command are given in the *Programmer's Reference Manual.*

`*ENUMDIR`

Creates a file listing the contents of a directory:

```
*ENUMDIR directory filename [pattern]
```

`*EX`

List details of all files in a directory:

`*EX`	lists details of files in the current directory
`*EX dir`	lists details of files in the named directory.

`*EXEC`

Obey the contents of a file as if you were typing it:

`*EXEC filename`	executes the named file
`*EXEC`	closes the exec file.

`*FREE`

Show how much space there is left in a user directory and on the disc.

`*FREE`	shows how much space the current user has left
`*FREE username`	shows how much space the named user has left.

(See *READFREE for a BBC or Master Series station.)

This displays the name of the disc or other storage device, its drive number, the number of bytes free and the number of bytes used. On a RISC OS machine, the last line also displays the amount of free space available to your user identity.

`*FS`

Change or display Fileserver number or name:

`*FS`	shows the current fileserver number
`*FS number|name`	changes the Fileserver to the given number or name.

`*I AM`	Log on:	
	`*I AM username password`	logs onto the Fileserver with the given identity.
`*INFO`	Display details of a single file:	
	`*INFO filename`	
`*LEX`	List details of all the files in the current library or a named library:	
	`*LEX` `*LEX libraryname`	
`*LIB`	Select a different library directory:	
	`*LIB libraryname`	selects the named library
	`*LIB`	selects the default library.
`*LIST`	Display a text file as a list of numbered lines:	
	`*LIST filename`	
`*LISTFS`	List fileservers available:	
	`*LISTFS`	
`*LOAD`	Load a file into memory:	
	`*LOAD filename [load address]`	
`*LOGON`	Log on:	
	`*LOGON username password`	
	See also *I AM to log on.	
	Select a different disc:	
`*MOUNT`	`*MOUNT disc`	changes to the named disc.
	Create a new user identity:	
`*NEWUSER`	`*NEWUSER username`	creates a user identity; use *CDIR to create a directory for the new user.
`*NOTIFY`	Send a message to a user:	
	`*NOTIFY station_no message`	

*OPT	Select an option, for example:	
	*OPT 4,3	executes a boot file on start-up
*PASS	Change your password:	
	*PASS *oldpassword newpassword*	
	To specify a blank password, type "". So, to set a password when there is none at present, type:	
	*PASS "" *newpassword*	
	To hide your password while you type it in, type *PASS then press the Return key before typing the old and new passwords; your password will not be reflected on screen as you type it.	
*PRINT	Print a file to the screen:	
	*PRINT *filename*	
*PRIV	Set a user's privilege:	
	*PRIV *username*	removes user privileges set previously and returns privilege to normal
	*PRIV *username* L	prevents a user changing his or her password
	*PRIV *username* F	prevents a user changing his or her password or boot options, and seeing anything outside the user root directory
	*PRIV *username* S	gives a user system privilege.
*PS	Change current printer server:	
	*PS *station_no*	changes to the printer on the station with the given number
	*PS *name*	changes to the printer with the given name.
*READFREE	Check the space left to a user on a Model B or Master series station:	
	*READFREE *username*	
*REMOVE	Delete a file:	
	*REMOVE *filename*	
	Unlike *DELETE, this command does not give an error message if the file doesn't exist.	

*REMUSER	Remove a user identity: `*REMUSER username`
*RENAME	Change the name of a file or directory, and/or move it to a different directory: `*RENAME oldname newname` One or both of these may be a pathname, to specify the source or destination directory. You cannot rename a file or directory if it is locked: use *ACCESS first to unlock it, and re-lock it afterwards.
*RUN	Load and run a file: `*RUN filename`
*SAVE	Create a file from memory contents: `*SAVE filename startaddr endaddr|length [execaddr][load addr]` You must give the address of the first byte to be saved, and either the address of the byte after the last one to be saved, or the number of bytes to save.
*SDISC	Select a different disc: `*SDISC discname` selects the named disc and logs on to it `*SDISC` reselects the user root directory and default library.
*SETFREE	Change the space available to a user: `*SETFREE username hhh` sets the space for the named user to *hhh* bytes (*hhh* is a hexadecimal number).
*SETPS	Change the current printer server: `*SETPS station_no` sets the printer on the station number given `*SETPS name` sets the named printer.
*SETTYPE	Change a file's filetype: `*SETTYPE filename filetype`
*SHUT	Close all open files in all filing systems: `*SHUT`
*SHUTDOWN	As `*SHUT`, but also logs off fileservers and parks hard discs: `*SHUTDOWN`

*SPOOL

Create a file from VDU output:

`*SPOOL` *`filename`*	spools to the named file
`*SPOOL`	closes the spool file.

*SPOOLON

As `*SPOOL`, but adds the output to the end of an existing file:

`*SPOOLON` *`filename`*	spools to the named file
`*SPOOLON`	closes the spool file

*TIME

Display the time according to the Fileserver (station time and date on a RISC OS station):

```
*TIME
```

*TYPE

Display contents of a text file on screen:

```
*TYPE filename
```

A note on *UP

`*UP` is not supported by the Level 4 Fileserver.

*USERS

Display the identities and station numbers of all users currently logged onto the Fileserver:

```
*USERS
```

*WIPE

Delete files/directories:

`*WIPE` *`filename`*	removes the named file
`*WIPE` *`wildcard`*	removes files identified by the wildcard
`*WIPE` *`dir`* `F R`	removes a directory and all the files in it
`*WIPE $.`*`id`* `F R ~C`	removes a user directory and all the files in it.

Command types and locations

This table summarises two types of information: which commands can be used on which types of computer, and where the commands are stored. If a 'B', 'L' or 'F' is shown against a command it is available on that station type, otherwise it is not. 'B' indicates a built-in command, provided by the station's ROMs. 'L' indicates a library command, provided by the Fileserver library. 'F' indicates a Fileserver command, provided by the Fileserver software.

Command	**Model B**	**Master**	**Archimedes**	
`*ACCESS`	B	B	B	
`*APPEND`	-	B	B	
`*BUILD`	L	B	B	Model B: in DFS library only
`*BYE`	F	F	F	
`*CAT`	B	B	B	
`*CDIR`	F	F	F	

Command	Model B	Master	Archimedes	
*CLOSE	L	B	B	
*COPY	-	B	B	Master: different format
*COUNT	-	-	B	
*CREATE	-	B	B	
*DATE	L	L	-	
*DELETE	F	F	F	
*DIR	F	F	F	
*DISCS	L	L	use *FREE	
*DUMP	L	B	B	
*ENUMDIR	-	-	B	
*EX	B	B	B	
*EXEC	B	B	B	
*FREE	L	L	B	
*FS	L	F	F	
*I AM	F	F	F	
*INFO	B	B	B	
*LEX	L	B	B	
*LIB	B	B	B	
*LIST	L	B	B	
*LISTFS	-	-	B	
*LOAD	B	B	B	
*LOGON	-	-	B	
*MOUNT	-	-	B	
*MOVE	-	B	use *COPY	
*NEWUSER	F	F	F	
*NOTIFY	L	L	available from RISC OS desktop 2.00	
*OPT	B	B	B	
*PASS	F	F	F	
*PRINT	-	B	B	
*PRIV	F	F	F	
*PS	L	B	B	
*READFREE	L	L	use *FREE	
*REMOVE	-	B	B	
*REMUSER	F	F	F	
*RENAME	F	F	F	
*RUN	B	B	B	
*SAVE	B	B	B	
*SDISC	F	F	F	
*SETFREE	L	L	L	

Command	Model B	Master	Archimedes
*SETPS	-	-	B
*SETTYPE	-	-	B
*SHUT	-	B	B
*SHUTDOWN	-	-	B
*SPOOL	B	B	B
*SPOOLON	-	B	B
*TIME	L	L	(station time)
*TYPE	B	B	B
*USERS	L	L	L
*WIPE	-	B	B

NETMGR

The following commands are available from the NETMGR utility on Model B and Master Series computers. You can only use this if you have logged on as a user with system privilege. The NETMGR utility is provided on the Support Disc supplied with the Fileserver, but you will not need it if you intend to control the Fileserver from an Archimedes or A3000 as !Manager and the desktop provide all the facilities offered by NETMGR. Typically, you will want to use NETMGR if the Fileserver is on the only RISC OS machine on the network and you don't want to use !Manager on the same station as !Server.

Before you can use any of these commands you need to log on as SYST and run the NETMGR utility by typing:

```
CHAIN "$.pathname.NETMGR"
```

A menu screen appears from which you select an option by pressing the appropriate letter key. You don't need to press Return.

When you have finished using one of the commands, press the Spacebar at the prompt to return to the NETMGR command screen. When you have finished using NETMGR, type `Q` to quit.

Copying files and directories

Use COPY to copy a single file, all the files in a directory, or all the contents of a directory. To start copying, type:

```
C
```

This will produce the prompt:

```
Pathname, source file/directory :
```

Type the name or pathname of the file or directory that you want to copy and press Return; this can include a disc name. To specify a disc other than the current disc, include the disc title, as `:title.pathname`

The next prompt asks for details of the destination:

```
Pathname, destination file/directory :
```

If you are copying a file, type a name or pathname for the copy and press Return.

If you are copying a directory, type a name or pathname for the new directory. If a directory of that name already exists, the copied files will be added to it; otherwise, NETMGR will create a directory to hold the copied files

As the files and directories are copied, the file names and their lengths are displayed on screen.

Deleting a directory

To delete a directory and its contents, use WIPE. To start wiping, type

```
W
```

This will produce the prompt:

```
Pathname of directory for deletion
```

Type the name or pathname of the directory that you want to wipe and press Return.

Printing a directory tree

To print a list of the files and sub-directories (with their contents) in a directory, use TREE. Type `T` to send the list to the printer.

Creating a new user

To add a user, use NEW USER. Type `N`, and you will be prompted for the identity of the new user. Type a new user name up to 10 characters long and press Return. This will create a new user identity and a directory for the new user.

Deleting a user

To remove a user identity, use DEL USER. Type `R`, and you will be prompted for the user identity you want to remove. Type the user name and press Return. The screen reports the files being deleted. This deletes the user identity, the user's directory and everything in the directory.

Appendix B: Error messages

When you or a user make a mistake, the Fileserver generates an error message which helps you work out what has gone wrong. The error message appears on the screen of the station that generated the error.

Error messages are listed here in alphabetical order, with a brief explanation of why they occurred and what you or the user can do to correct the mistake. You may get additional error messages from RISC OS or an application; those listed here are just the Fileserver messages.

Access violation	You have tried to do something which requires access rights you do not have – for example, reading a file that does not have public read access.
Already a user	You have tried to create a new user with the same user identity as an existing user. Use a different user identity, or remove the old user.
Already open	You have tried to open a file which is already in use, or delete a directory that another user is using.
Bad command	The Fileserver doesn't recognise a command that has been typed; this usually occurs when the command name has been mistyped.
Bad drive	You have referred to a drive that is not present.
Bad file name	You have tried to create a file with an invalid name (for example, one that is too long).
Bad name	You have tried to use a file or directory name that includes illegal characters (such as $).
Bad privilege letter	You have tried to set a user privilege using an invalid letter, eg `*PRIV FRED Q` Try again, using a valid privilege letter (F, L or S). Use `*PRIV` *name* with no letter to set a user privilege to Normal.

Bad rename	You have tried to rename a file and have given the wrong number of parameters.
Channel	You have tried to use an invalid channel number; this may be because of an error in the program you are using, or because the Fileserver has made an error. The Fileserver may think you are logged on when you are not, or may think you are not logged on when you are. Try to log on again (logging off first if necessary).
Directory full	You have tried to create a file in a directory which is already full (ie contains 255 entries). Use another directory or delete one of the files in the directory.
Disc full	You have tried to save a file that is too large for the amount of space remaining on the disc. Make room by deleting unwanted files.
File not found	The file you have asked for, or that an application has looked for, can't be found. This may be because the file does not have public read access.
Insufficient access	You have tried to open a file that does not have public read access, or save a file in someone else's directory.
Insufficient privilege	You tried to use a management facility with a user identity that is not system privileged. Log on again as a privileged user.
Insufficient space	There is not enough space left in the user root directory to save a file.
Is a directory	You have tried to use a directory as if it were a file (for example, tried to drag it into an Edit window).
Is a file	You have tried to use a file as if it were a directory (for example typed `*CAT filename`).
Not found	You have specified a file or directory that does not exist. You may have mistyped a filename or given the wrong path name. Use the `*CAT` command or the NETMGR utility's TREE option to check the name and where it is.
Server not available	Logon to the Fileserver is not allowed.
Server internal error, please report to system manager	A serious error has occurred; report it immediately.
Sorry, not supported	The command or function requested is not supported.
Too many open files	In random access, you have used all the channels available. Close some files before opening new ones.
Too many users	You have tried to log on when there are already 128 users logged on. • Get someone else to log off, or • wait until someone else logs off, or

- log on to a different Fileserver (if there is one).

User not known

You have tried to log on with a user identity that is not in the Fileserver's password file. Check that you typed it correctly. The password file may be out of date if you have had to use a back-up because the working version became damaged.

If you have more than one Fileserver on your Econet, you may be trying to log on to the wrong one.

Who are you?

You have tried to use a Fileserver command before logging on, or after the Fileserver has been shut down and then started up again. Log on again.

Wrong password

You have tried to log on but not typed the correct password to go with your user name; you may have mistyped it. The password file may be out of date if you have had to restore a back-up version.

If a user cannot remember their password, use !Manager to remove the password (see page 42).

Appendix C: The Broadcast Loader

The Broadcast Loader has been developed to alleviate the problems that can occur when many users on a network all try to load the same application simultaneously. Typically, this situation is encountered in the classroom when all pupils try to load an application at the start of a class, but the Broadcast Loader is not limited to use in schools.

The Broadcast Loader can work with the Level 4 Fileserver to handle multiple demands for the same application or file. The file required will be loaded first onto one station on the network that has requested it. This station will then broadcast the file to other stations waiting for the same file. Using the Broadcast Loader, it is possible to load a file on multiple RISC OS stations in approximately twice the time taken to load it onto a single station.

The Broadcast Loader can broadcast a file only to RISC OS stations, but Master and BBC stations can co-exist on the same network without interfering with the Broadcast Loader's performance.

Instructions for using the Broadcast Loader are given in the ReadMe file on the Broadcast Loader disc.

Glossary

Access rights	Each file on the disc has an access defined for it which determines who can use, change or delete it. Access is divided into Owner and Public rights. As Network Manager, you have unrestricted access to all files.
Back-up	A copy of the files on the Fileserver kept on another storage device or on floppy discs. Back-up copies are made to protect users from losing information.
Client machine	A station attached to the Fileserver host machine by means of an Econet Local Area Network. Users access the Fileserver from client machines.
Group user	A user who has logs on to the Fileserver using a group identity, given in the form `groupname.username` at log on. A group user may use a group root directory or have their own user root directory. If he or she uses a group root directory, they own all other user directories in the group.
Group user directory	A directory shared by a group of users. This is opened when one of the group logs on (and does not have their own independent user root directory). All members of the group share ownership of the group user directory and have equal access rights to the files and sub-directories in it.
Hidden objects	Directories and files that are not shown in directory displays opened by users who do not have the access to use them. Locked directories, and files with no public read access, are omitted from directory displays if you have enabled the Hidden objects option from !Server.
Job	A file sent to the print spooler for printing. The file is called a job while it is waiting in the print queue.
Library	A special directory used to store transient commands and files that several uses need to access.
Logfile	A file that stores a record of events performed by the Fileserver. You can choose which events to record. The logfile is a text file stored inside !Server.

Log on	The process of selecting a Fileserver unit and establishing a connection between it and the client machine so that you can begin using it.
Queue	A list of print jobs that have been sent to the print spooler from client machines. The jobs in the queue are printed in the order in which they were sent to the spooler, unless you delete or suspend jobs in the queue.
Pathname	The full name of a file or directory, identifying its position in the directory structure. In its fullest form, a pathname gives the name of the filing system, a disc drive number (or equivalent), a disc name, and a list of the directories which must be opened to find the file or directory. For example, this pathname `Net#FRED:$.letters.VAToffice.1stQtr` would identify a file called `1stQtr` stored in the directory `VAToffice` inside a directory called `letters` in the root directory of the hard disc called Fred, accessed over the network using NetFS.
Printer definition	A description of a printer for which a print queue has been set up with !Spooler. The printer definition includes the printer's name, location (parallel or serial port, network, file) and whether it is a PostScript printer.
Root directory	The main directory on a disc that contains all other directories and files. It is indicated in pathnames by the character $.
Spooler	A managed queue of files waiting to be printed when the printer is available. The print spooler stores the list of jobs and processes each in turn.
Status window	A window that reports the current state and use of the Fileserver or print spooler. You can choose to display the status window while the Fileserver is in use, but if you leave it on screen all the time, the Fileserver will run more slowly than if you remove it.
User root directory	A directory which belongs to a user and in which he or she can save and work on files. Usually, users havetheir own user directories, which they enter when they log on to the Fileserver. If you do not give users a root directory of their own, the root directory is opened for them when they log on to the Fileserver.
User profile	A collection of parameters defining a user's identity and privilege.

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